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CONTENTS

		Page
Editorial—Some Highlights	...	1
Education of Women and Girls in Tamil Nadu *By Mr. S. V. Chittibabu*	...	21
Tamil Nadu Education in the Seventies	...	50
Correspondence	...	67

EDITORIAL—SOME HIGHLIGHTS

Tamil Nadu Budget.

The 1971–72 State Budget just adopted by the Legislature has pluses and minuses as a fiscal instrument and promoter of growth and social justice. The pluses are its contribution to continued acceleration of agricultural and industrial growth including programmes of major and minor irrigation, rural electrification, dispersal of industries and the expanding provision for education, employment generation, health, Harijan Welfare and housing. On the fiscal side, enhanced adjustments of the Urban Land Tax, Sales Tax, Agricultural Income Tax and Revenue from liquor go into effect. The problems involved are the growing deficits, the slow pace of redistributive justice, the prospects of a further rise in living costs and the lack of adequate preparation for the management of nationalised transport services. The most urgent problem is the continuing and enlarged deficit which arises from the responsibility for financing the State development functions. On the revenue side the estimated receipts are Rs. 342.65 crores and expenditures Rs. 358.52 crores, involving a deficit of Rs. 15.87 crores. The deficits on capital and loan account increase this to Rs. 36 crores. To this should be added the deficit from the last fiscal year of Rs. 23.23 crores, making a total deficit of Rs. 59 crores. The additional resources to be raised this year amount to Rs. 22 crores, leaving a hard core deficit of Rs, 37 crores for the current financial year. This unhealthy financial situation needs correction. Some relief could have been obtained by further economies in non development administrative expenditures of the State and through equalising the tax burden on the rural rich with that of their urban counterpart. But the major solvent must be a review and readjustment of Centre-State financial relations. There is a curious identity between the State's hard core deficit of Rs. 37 crores and the repayment during the year to the Centre by the State on past loans of Rs. 37·54 crores. One of the first tasks of the National Development Council and the Finance Commission should

be to examine this impossible situation of the States' indebtedness and find a viable and lasting solution to it. Such an examination should also include a more equitable division of the total national revenues between the Centre and the State, in keeping with the latter's growing development responsibilities. The other problem is to move somewhat more speedily to raise the low living levels of the poorer 60 per cent of the people in the State. In this matter the enhanced urban tax and its extension to the other four urban areas together with the enhanced sales tax which is also extended to the other four cities should be matched by similar fiscal measures to transfer resources from the rural rich to the rural poor. Such transfers call for a revised and effective enforcement of land reform and a much more general and enhanced agricultural income tax. In this connection the programme to provide house sites to farm workers together with the plan to issue pass books to all land holders setting forth the details of land ownership, taxes paid, loans, sales and transfers provide useful instruments which could be used for bringing about a measure of rural equality. The Agricultural Income Tax Bill now before the Legislature is a sound rationalising instrument but as a revenue raiser and a source of mopping up unearned rural incomes, it needs further strengthening.

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Agricultural Perspectives.

The State target of food grain production of 73 lakh tonnes for the current year on which the budget is based is likely to be attained. The pre monsoon rains and the South West monsoons, though in some deficit, ensure good food and cash crops in most of the State. The semi drought conditions in Tirunelveli and Ramanathapuram will only delay the planting of cholam, groundnut and dry paddy. The standing crops in Tiruchirapally, Thanjavur, North and South Arcot, Chingleput and Coimbatore are in good shape. The high yielding strains which covered 42 per cent of the cultivated area are now being increased to over 50 per cent, from 49 lakh acres to 59 lakh acres. In Thanjavur District alone 5 lakh acres are under Kuruvai rice crop. The extended pulses programme covering 23·28 lakh acres is also developing well. Redgram, as a mixture crop with rainfed groundnut, greengram and horsegram are growing intensively in

Coimbatore, Salem and Krishnagiri. This part of food grain production is also an important element in combating the protein hunger in the State and the Country. The three cash crops of tea, coffee and rubber have also registered a high increase. As a result, tea exports have increased by Rs. 20 crores, with Japan becoming a major client and similar increases are registered in coffee and rubber. In fact the glut in the country's rubber supply has led to the ban on imports of natural and synthetic rubber until such time as the rubber goods industry picks up and permits relaxation.

Alongside of these positive agricultural pointers certain problems for the future need attention. First is the use of fertilisers in making rice and pulses share in the wheat break through. Despite the positive annual reports of Parry's, Shaw Wallace, Madras and Coromandel Fertilisers etc. fertiliser use has increased only by 35 per cent in the State, compared to the 160 per cent increase in its use in the Punjab, Haryana and Uttar Pradesh. The prevalence of small holdings and the limited irrigation facilities together with lack of an adequate sale, promotion and distribution network account for the slow growth in fertiliser use in the State. The green revolution base for Tamil Nadu as elsewhere is fertiliser application. It is therefore necessary that Government Fertiliser units and Co-operative Societies help the State farmers in extending rapidly the intensive use of fertilisers.

A second problem relates to markets and post harvest facilities. Lack of storage facilities have already led to losses of Rs. 100 crores in Bihar and Rs. 200 crores in Uttar Pradesh of the rabi crop which has had to face to unseasonal rains. In Tamil Nadu similar lacks lead to use of mud plastered drying yards and highways, which are exposed to vagaries of the season and other losses from rodents etc. Increased stocks which are inevitable with agricultural transformation can become a heavy burden on the farmer. A parallel and related problem is the need for developing regulated and organised markets for high yielding or new varieties of crops. As the high yielding variety paddy crop is harvested and the new long staple variety of sujata cotton cropped, markets become crucial in ensuring a fair return to the farmer. Imports policy and purchases by the Food and Cotton Corpora-

tion should be so timed and organised as to enable regulated markets to function effectively. In the case of cotton such action in one district alone, Coimbatore, can save Rs. 1 crore in foreign exchange and provide 25 thousand bales of the long staple variety from 10 thousand hectares in Tamil Nadu. The food grain challenge to marketing is even more awesome. A recent study indicates that by 1973, 36 million tonnes of surplus food grains will have to be procured from surplus areas and processed, packed, transported and marketed every year through the country.

A third bottleneck is the institutionalising of credit for the farmer. The budget forecasts increasing co-operative short and medium term credit from the current Rs. 44.43 crores to Rs. 61.5 crores, long term credit through land development Banks of Rs. 21 crores and the World Bank/ IDA Credit for Rs. 40 crores for wells and tractors. These forecasts are heartening but the manner in which credit actually reaches the farmer demands attention and action. The following 4 tables from a recent State Survey covering on a random basis five farmers from each of four villages of one panchayat union from each district highlight the issues involved.

TABLE I

Statement showing details of sample farmers who are beneficiaries of various financial institutions and non - beneficiaries and the extent of credit availed by them.

	Farmers		*Area covered*		*Credit availed*	
Type of Institutions	*No.*	*Percentage*	*Acres*	*Percentage*	*Amount Rs.*	*Percentage*
1. Government Sources	47	18.22	373.07	25.18	69,710	16.94
2. Commercial Banks	21	8.14	172.06	(11.61)	40,900	9.94
3. Co-operative Agencies	80	31.01	508.48	(34.32)	1,59,330	38.71
4. Private Sources	71	27.52	362.03	24.44	1,41,635	34.41
5. Non-Beneficiaries	99	38.37	443.01	29.91	—	—
Total	258	—	1481.37	—	4,11,575	(100.00)

TABLE II

Statement showing size-groupwise and sourcewise supply of credit in the sample farms.

(in rupees)

Size-Group	*Amount of crédit supplied by*				*Total*
	Government Agencies	*Commercial Banks.*	*Co-operative Institutions*	*Private Sources*	
Less than 2.50 acres	8,250 (13.05)	7,500 (11.87)	6,720 (10.63)	40,735 (64.45)	63,205 (100.00)
2.5 to 7.5 acres	28,570 (17.05)	17,400 (10.38)	66,610 (39.75)	55,000 (32.82)	167,580 (100.00)
7.5 to 15.0 acres	29,140 (24.18)	6,000 (4.98)	39,450 (32.75)	45,900 (38.09)	120,490 (100.00)
More than 15.0 acres	3,750 (6.22)	10,000 (16.58)	46,550 (77.20)	—	60,300 (100.00)
Total	69,710 (16.94)	40,900 (9.94)	159,330 (38.71)	141,635 (34.41)	411,575 (100.00)

TABLE III

Statement showing average demand and supply of credit and gap per farm and credit gap per acre in sample farms (size-group-wise)

Size-Groups.	*No.*	*Net area cultivated*	*Per Farm*			*Credit gap per acre.*
			Average demand	*Average supply.*	*Credit gap.*	
		(acres)	Rs.	Rs.	Rs.	Rs.
Less than 2.50 acres	100	1.51	1,684	632	1,052	695
2.50 to 7.50 acres	115	4.69	3,725	1,457	2,268	483
7.50 to 15.00 acres	34	10.55	7,829	3,544	4,285	406
More than 15.00 acres	9	22.38	15,250	6,700	8,550	381
Overall average	258	4.85	3,876	1,595	2,281	470

TABLE IV

Cost of credit short - term credit—cost per 100 Rupees.

	Particulars.	Government Credit	Commercial Bank Credit	Co-operative Credit	Private Credit
		Rs.	Rs.	Rs.	Rs.
1.	Cost of loan application	0.30	Nil	0.20	Nil
2.	Value of court-fee stamp to be affixed.	0.25	Nil	Nil	Nil
3.	Cost of obtaining property statement, Chitta-extract etc.	3.00	3.00	3.00	Nil
4.	Cost of encumbrance certificate	Nil	Nil	Nil	Nil
5.	Cost of obtaining solvency certificate	Nil	Nil	1.00	Nil
6.	Transport charges (Regular)	2.00	2.00	1.00	Nil
7.	Service charges	Nil	0.50	Nil	Nil
8.	Stamp duty	Nil	Nil	Nil	Nil
9.	Security deposit	Nil	Nil	Nil	Nil
10.	Share capital (Interest divided) at	Nil	Nil	3.00	Nil
11.	Interest charges	8.00 (at 8% for 1 year)	8.00 (at 8% for 1 year)	7.00 (at 7% for 1 year)	36.00 (3% per month for 1 year)
12.	Others (incidental charges)	5.00	2.00	2.00	Nil
	Total	18.55	15.50	17.20	36.00

Among other matters, these tables show : (a) private money lenders and their high cost credit are the major source of credit for the smallest farmers, (b) commercial banks credit is marginal, (c) the credit gap is largest for the smallest farmer, (d) co-operative credit is important for medium size farmers. Long term loans and repayment procedures and traditions are serious bottlenecks. The institutions which should be further developed and used in this situation are the government agencies including small farmers and development units and the co-operative societies,

with commercial banks allocating a certain percentage of their loan facilities to these two agents, rather than attempting direct loans to farmers. The institutional change called for is with regard to the money lender and the control and management of the co-operative societies which should be vested in the hands of the small farmers. In this context, the current controversy over differential interest rates by commercial banks is somewhat beside the point. It is not the rate of interest of the commercial bank that needs lowering: it is for its credit facilities to be institutionalised and be made available easily to the farmer through agencies that he knows and controls.

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Industrial Growth.

The record of industrial progress of the State in 1970–71 set forth in the Government's Annual Review is impressive and includes the following main elements: a 21.14 per cent contribution to total State income: 5597 million units of power generation with 2484 million units of industrial consumption: 13 public 136 private companies registered with the paid up share capital of Rs. 54 lakhs: 371 factories employing 10758 workers: 11 Central sector projects with a total investment of Rs. 377 crores and an annual turn over of Rs. 90 crores: 4 joint sector projects under the Tamil Nadu Industrial Development Corporation: progress in 4 current projects and 18 projects under study: 84 licenses in the private sector in Metallurgy, Engineering, Chemical and Food Processing during the last three years: progress in mineral survey, the growth of small scale industry in engineering, furniture, ceramics, tannery etc. and further development of 15 industrial estates and handicrafts: institutional financial assistance from IFC, ICIC, IDBI, RBI, State Bank of India, Tamil Nadu Industrial Investment Corporation and Industrial Co-operative Bank amounting to Rs. 2985.24 lakhs of which 2303.13 lakhs were disbursed: operation of 4 textile mills and financial assistance to sugar and other plants.

The problem of sick textile mills in the State is briefly referred to in the Review. The 21 mills which have been closed in Tamil Nadu are part of the All India textile mills crisis, demanding intensive investigation and corrective action. The issues at stake are serious as they relate to the growing unemploy-

ment situation and labour unrest, the supply of controlled cloth for the poor majority in the country and the new export vistas opened up by the generalised scheme of preferences of the European Economic Community, The shut down is only marginally due to the rise in cotton prices and the general credit position. It is basically the result over the years of unsound management, outdated machinery, growing liabilities, some corruption and surplus labour force resulting in mounting operational losses. The report details the working results of the 4 textile mills taken over by the Tamil Nadu Textile Corporation and which produced 25 lakh yarns and sold 23.5 lakh yarns at a total value of Rs. 244 lakhs, employing 3000 workers. The Central Government Committee appointed under the Industrial Development and Regulation Act has arrived at conclusion on 20 out of 21 closed mills. On its recommendation, the State Government is planning to take over 7 more mills employing 6000 workers and arranging for the private sector to take over a further 7. It is recommended that 3 mills are in such bad shape that they should be liquidated. Some of the above 7 should also be allowed to go into liquidation therefore they are picked up at residual prices. Serious labour unrest in the area is slowing down the take over arrangement. Further it is a matter of regret that the National Textile Corporation and the State Government are not in harmony in dealing with this important and urgent problem. An agreement between them and labour is a precondition for continuing assessment of the position in the mills and improved and enlightened management of the plants, which is a factor in scarce supply in the public sector.

An encouraging element in the Annual Report is the sharp increase in the loans disbursed under the State Aids to Industries Act. In 1969-70, 1473 loans were made amounting Rs. 24.9 lakhs. In 1970-71, 1744 loans were made amounting to Rs. 31.6 lakhs. Industrial power consumption has, according to the Review, increased 5 fold in the last decade and a half. This trend towards increased power consumption is a general one due not only to accelerated industrialisation but also to completing rural electrification and increasing energisation of pump sets in the State. It is therefore essential that the Government should accord high priority to power generation programmes, particularly thermal

and nuclear power, with appropriate financial help from the Centre. The loan programme reported for 1970-71 for the development of backward areas in the State needs further strengthening. Rs. 2.35 crores form IFC has been made available to the Co-operative Sugar Mill in Dharmapuri, the Cement Factory in Ramanathapuram and Textile Units in Madurai; Rs. 1.75 crores from IDBI for India Cements, Chettinad Cements and Seshasayee Industries in Tiruchirapally and South Arcot. These can only be regarded as an encouraging start.

The annual reports of a number of companies in the private sector, Shaw Wallace, Madras Aluminium, South India Viscose, E.I.D. Parry, Straw Products etc. highlight the improved demand and market prospects for fertilizers, chemicals, paper and pulp, machinery, sugar etc. In some cases serious shortages of raw materials and other inputs are reported. A simple and rolling input-output analysis could have been used in order to avoid the short supply of chemicals—caustic soda, soda ash, cryolite etc. which are hampering the production of aluminium, glass, paper and fibre generally and the expansion programme of Madras Aluminium. The same kind of planned co-ordination is needed with regard to pulp import licenses, rayon problems and forest policy. Madras Fertilisers, E I D - Parry and Shaw Wallace refer to the pick up in demand of fertilizers, (which however is nowhere near what an agricultural breakthrough needs) and the positive trends following from sugar decontrol. There is, however, a general feel of uncertainty in these reports with regard to much needed industrial peace, the application of the decision to terminate the development rebate and the functioning of licensing and antimonopoly regulations.

Some industrial initiatives that are being planned which have multiplier significance for the future are: expansion of the capacity of the continuous casting plant at Arkonam by 50,000 tonnes annually, the development of ancillary industries for compression springs, decoiling plant, servo motors and seamless steel tubes which will feed the High Pressure Boiler Plant at Tiruchirapally, which has secured a 10 crores export order from Malaysia: the Tamil Nadu Industrial Investment Corporation credit facilities to transport operators and small business enterprises: Belgian

co-operation with Hindustan Photo Films in Ooty so that both it and Mysore Acetate can work to full capacity: the Cellular Concrete Plant at Ennore which with the co-operation of Poland will produce 1,38,000 cu.m of building materials for the Tamil Nadu Housing Board: the 4.6 crore salt industry project on the 40,000 acre land on the East Coast: the Cardiograph paper factory at Polal for the District and Taluk hospitals: the ionospheric absorption studies in Ettyapuram and the 240 lakh cigarette plant for the State.

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Employment.

The programme to augment rural employment was referred to in the May and June issues (Nos. 4 & 5) of the Bulletin. The Budget proposes special programmes for the educated unemployed in the State. For medical graduates 100 new assistant posts have been created with a monthly stipend of Rs. 250 and a priority to filling established posts as they become vacant. Fifty additional posts of Assistant Surgeons have also been created. At the same time the State has decided to reduce the number of entrants in the Medical Colleges. The real remedy for unemployment among medical graduates is for the medical profession to spread its services over the neglected rural countryside. In a State where 80 percent of the people live in rural areas, the concentration of 80 percent of practising doctors in the urban areas is surely the fundamental cause of the seeming unemployment of medical graduates. From the point of view of providing even the minimum health services to the rural people, the present restriction of admission to the medical colleges which will reduce the number of future doctors, is short sighted. The rural majority is not going to continue passive acceptance of its second class citizenship status. 2400 University and diploma engineers are being provided with employment under a Rs. 70 lakhs special programme. Here again reduced admissions into engineering colleges and Polytechniques continue. In this connection, the Institute of Applied Manpower Research in a recent study shows that we will be short of civil engineers by 7000 in 1973 and 73,000 by 1978 particularly diploma engineers, if we continue the present reduced intakes in our engineering institutions—such a shortage could be a serious bottleneck for our industrial and agricultural growth in the Fifth

Plan. While continuing with our current concentration on quality improvement in polytechnic education, the State Planning bodies must work out precise figures for expanding polytechnique intakes. A special programme to counter teacher unemployment will enable the employment of 6500 teacher graduates as apprentice teachers. The proper distribution of these apprentice teachers between the needy primary and secondary schools should make this a normal employment resource. Finally a credit of Rs. 1000 for setting up each rural workshop by unemployed industrial institutes graduates will provide employment to 3000 skilled workers. This programme should be merged with the small industries and Agro Servicing centres programme of the State, so that it becomes a normal and expanding employment service.

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Education :

The Education demand for 1971-72 of Rs. 83.12 crores has just been passed by the Legislature. This is a spectacular increase in the State's educational investment which stood a little over a decade ago, in 1960-61 at Rs. 15 crores. This high priority for education in Tamil Nadu was explained by the Government not in terms of its production and growth generation role but as its major instrument of social justice. "Education is perhaps the most potent instrument for the removal of social and economic inequalities" states the Budget document. This redistributional emphasis on the role of education refers of course to its longrun workings and should not be taken as a means of correcting inequalities induced or aggravated by other parts of the economic and social system. It is not only education but all parts of the Tamil Nadu system that must be made to promote social equality. This high purpose of education and its priority, demands that the education system give the State, the people and taxpayers Rs. 83.12 crores worth of education — that not a rupee of it be wasted or lost. The Madras Institute of Development Studies, as referred to in the July issue (No.6) of the Bulletin, is engaged in quantifying the losses and wastes of the education system with a view to helping it attain more nearly its high production and redistribution functions.

With the opening of the school year, the application for admission in all urban education institutions far exceeds their

capacity. This "rush" for education at the High School, College, Technical, Medical and Engineering institutions is reaching a break-down point. Parents, students and their relatives and friends besiege at all hours of the day and night principals, head-masters, teachers, ministers and any one and every one thought to be able to help. The greatest pressure is for medical college seats. At the same time quite large shortfalls in enrolment in high school and colleges are reported in the rural areas. The Chief Education Officer of Chingleput for instance reports such short falls in the age groups 11 to 14 and 14 to 17. This suggests that in addition to expanding the physical capacity and introducing the shift system in urban schools, some movement of urban students to rural institutions with appropriate monetary compensation might be planned.

Two important educational innovations in the country call for some comment. Neighbouring Andhra Pradesh Government has decided that there should be no detention of school students at the end of every class except at the stage where they take common public examinations at the 7th and 10th classes. The other initiative in another State permits students to bring their reference books into the examination hall for consultation and for avoiding the examination being an exercise in memory. A public debate among parents and teachers is now raging over the merits of these initiatives. References are made to a recent study of student performance in 100 schools in one district. Some 20 reasons for "heavy failure" of students in examinations are listed: Unequal learning attainments, lack of individual attention by the teachers, heavy curricular content, deleterious effect on examinations of including class records, free education, over-crowding in class rooms, frequent teacher transfers, lack of time to prepare for classes as some students have to walk 5 miles daily to the school, poor and faulty evalution techniques etc. So far expressed opinions are running heavily against these reforms in terms of students' irresponsibility, weakening the authority of the teacher, adding to the flood of educated unemployed, and increasing difficulties in organising examinations. Apart from other needed reforms, if these changes are accompanied by detailed annual school records of each student's learning attainments and the terminal examinations being freed from their

present concentration on testing memory and being simply a passport to the next school stage to becoming a means of testing how far the student has learned how to learn and his ability to organise and solve problems, the end processes of education might give the economy a surer indication of the real education and ability of its products.

The reorientation of technical education in the State following on the Damodaran Committee Report (referred to in the July issue *(No.6)) and other studies is proceeding* apace. The Tamil Nadu Industrial Liaison Board is to be set up in order to improve the liaison between the training institutions and industry, meet the criticism of industrialists of existing training programmes and give practical orientation to institutional training. Its major aim is to bring industry into the college campus. In this regard for example the Regional Engineering College at Tiruchirapally has established a two way traffic between the college and Bharat Heavy Electricals by starting an industry oriented post graduate programme. With the adoption of the Agricultural University Act by the Legislature and the Vice Chancellor taking office, the Coimbatore *institution should* become the spearhead of agricultural transformation in the State. All agricultural research, the promotion of special studies in new fields of farm research and the substantive link with the State extension services which provides education and information to the farmer should squarely rest with this institution, which has a proud record and tradition to build on. The University's financial needs for its triple function of teaching, research and extension should be met in full by the Central and State Governments.

The Council of Scientific and Industrial Research has established a regional campus in the technical education section of the city. The regional campus will house the southern units of Six National laboratories—the Structural Engineering Research Centre, Rourkee, the Mechanical Engineering Research and Development Centre, Durgapur, the Central Electro Chemical Research Organisation, Karaikudi, the Central Scientific Instruments Organisation, Chandigar, National Metallurgical Laboratory, Jamshedpur, and The Central Public Health Engineering Institute, Nagpur. *This facility will* help to forge the links currently weak

or missing between technology and production in the State. Again the Astro-physical observatory at Kodaikanal has become an autonomous scientific body, the Indian Institute of Astro-Physics. Its high quality scientific work in instrument design and photographic and visual petrol of the atmosphere as well as its links with the International Scientific community will be further strengthened with this reorganisation.

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The Youth Corps.

The State Government has launched a Youth Corps with an initial intake of 2000 young graduates. The Department of social welfare which is organising this programme is in the process of recruiting and training the members from among recent graduates in Arts, Science, Medicine, Agriculture and Engineering. The corps will be engaged in a variety of development activities with heavy emphasis on adult literacy and adult education including rural recreation and assistance to dry and small farmers in the latest technologies. Each member will receive a monthly honorarium of Rs. 175/-. Tamil Nadu has a number of youth volunteers from U.S., U.K., and Germany who are engaged in working in various development sectors. The State Youth programme is a rather late starter in engaging and involving youth in Tamil Nadu development and helping them prepare for tasks awaiting them. The programme must be kept flexible and not brought under civil service regulations. It must nurture and maintain the spontaneity and enthusiasm of youth and be supported widely by parents and the public. The programme can also help mitigate the waiting period of young graduates before employment and help move its members into development careers, adding knowledge and vision to their innate enthusiasm and idealism.

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Pollution in Madras City.

A well prepared and fruitful 4 days seminar in June on City Pollution brought together industrialists, transport authorities and owners, Corporation and Government staff and Scientists and technologists. After three days of visits to the City's water, transport and industrial locations, they concentrated on the last day on the problem of environmental pollution. Madras city with

a population of 2.7 millions, is fast becoming a crowded metropolitan area with all the attendant problems. Numerous industries pouring out tons of industrial waste have sprung up around the city; the vehicle population filling the air with injurious smoke, has crossed the 50,000 mark, and slums with unspeakable hygienic standards have sprouted at random. But the resources on which the city has depended all these years the land, water and air have remained constant. (the city was built for 100,000 persons and its infrastructure is still that). While all possible steps have been taken for maximum utilisation of these resources in the process safeguards have not been taken against the dangers of pollution. Smoking chimneys and automobiles, once the pride and symbol of industrial progress, have to-day become the surest health hazard facing the citizens.

Organised on the basis of sound technical preparation by the staff and students of the Indian Institute of Technology, Guindy, four groups in the seminar studied in depth (a) air pollution by combustion engines, (b) air pollution by industry (c) water pollution and (d) pollution by industrial and urban wastes. They made a series of recommendations to the State Government, Corporation Officials, Industrialists, Transport Operators, Scientists and Technologists with regard to (a) monitoring levels of pollution (b) controlling pollution and (c) research and development on antipollution measures. The problem of pollution is an off shoot of the State's industrial progress. The problem of the State's biosphere is the problem of the neglected, underutilised and stagnant country side and the poverty ridden rural majority. In light of our limited development resources as a State and a Country, the Conference discussed the priority to be given to anti-pollution programmes and decided that there is no conflict, no priority as between the attack against urban pollution and that against rural poverty. Both are part of a single priority and the anti-pollution programme must be given the same priority as the State's education, health and housing programmes. The first practical results of the Seminar followed within a week. On July 2, the Tamil Nadu Government constituted a five-member committee consisting of the Director of Health Services, the Chief Engineer, representatives of the Corporation, State Transport and Police Department to consider health hazards caused by air

pollution in Madras and submit within two months a report containing recommended remedial measures. The next step is to extend this programme to the city's water resources.

This programme has also international roots. Unesco is heading a programme on Man and His Environment and Man and the Biosphere and the research and development part of the Madras programme should draw upon Unesco's experience and advice. Similarly in 1972 at Stockholm the United Nations is organising an inter-governmental conference which will establish policy on environmental pollution. The Madras programme can make a useful contribution to the Indian Government participation at Stockholm. The Director of the Madras Institute of Development Studies who presided over the Madras Seminar is a member of the International Committee of Consultants for the Stockholm Conference. Equally the programme has personal roots. Behind and complementary to all the State monitoring and preventive programmes, is the need for every one and every family in the city to develop a personal code of cleanliness and a family code of hygienic discipline and community consciousness related to our day and age in this city, which can make this drive for a human environment a reality. For the greatest pollutant causing pollution of the city is man.

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Seminar on Consumer/User Oriented Research.

The programme for the Seminar to be held on Friday 17, Saturday 18 and Sunday 19 September. 1971 at Presidency College, Madras has now been finalised. It will be attended by 10 industrialists and Secretaries of Development Departments of the State Government and 20 research specialists from the Universities and Research Institutions in Tamil Nadu.

PROGRAMME

Friday, 17th September.

Theme : **Problems of Research Needs and Use of Research.**

President : Honb'le Thiru S. Madhavan,
Minister for Industries,
Tamil Nadu.

Rapporteur : Mr. S. Narayanaswamy,
Vice-President,
Southern India Chamber of Commerce,
(Indian Chamber Buildings)
Madras – 1.

10 a. m. : President's Remarks.

10.30 a. m. to 1 p. m : *Private Sector & Small Industries.*

Speakers :

1. Mr. D. C. Kothari, Industrialist.
2. Mr. N. Mahalingam, Industrialist.
3. Mr. A. Padmanabhan, Mg. Director, Tamilnadu Small Industries Corporation Ltd.,

Discussion and Rapporteur's Summary.

Public Sector.

1. Mr. M. Sundar Raj, Financial Adviser, I. C. F.
2. Mr. A. Chakravarty, Dy. Director-in-charge, Mechanical Engineering Research and Development Organisation, CSIR, Adyar.
3. Mr. R. Sundaracharlu, General Manager, The Surgical Instrument Plant, Madras.

Discussion and Rapporteur's Summary.

3.00 p. m. to 6 p.m. : *Development Departments of Government.*

Speakers :

1. Thiru V. Karthikeyan, Secretary to Government, Industries Department.
2. Thiru P. N. Vedanarayanan, Secretary to Government, Agriculture Department.

Discussion & Rapporteur's Summary

3. **Thiru J. A. Ambasankar,**
   Secretary to Government,
   Health & Family Planning,

4. **Thiru K. Diraviam,**
   Secretary to Government,
   Education Department.

   Discussion & Rapporteur's Summary.

Saturday, 18th September.

Theme : **Research and Tamil Nadu Fourth Five Year Plan.**

President : Dr. G. R. Damodaran, Principal, P. S. G. College of Technology, Coimbatore.

Rapporteur : Dr. C. T. Kurien, Professor of Economics, Madras Christian College, Tambaram.

10 a. m. : President's Remarks.

10.30 a. m. to 1 p. m. : *Tamil Nadu Sector of the Fourth Five Year Plan.*

Speakers :

1. Dr. B. Natarajan, Chairman, Institute for Techno Economic Studies, Madras - 31.

Discussion & Rapporteur's summary.

Agriculture.

2. Dr. Bright Singh, Professor of Economics Madurai University.

Discussion & Rapporteur's Summary.

Industry.

3. Dr. V. Shanmugasundaram, Prof. & Head of the Department of Economics, Madras University.

Discussion & Rapporteur's summary.

3.00 to 6.00 p. m.

Education.

Speakers : 1. Dr. Chandran D. S. Devanesen,
Principal, Madras Christian College,
Madras – 59.

Discussion & Rapporteur's Summary.

Rural Development.

2. Mr. V. Ganapathi,
Prof. of Economics,
Pushpam College, Thanjavur.

Discussion & Rapporteur's summary.

Health & Family Planning.

3. Dr. C. M. Abraham,
Reader in Sociology,
Madras University.

Discussion & Rapporteur's Summary.

Housing, Rural works and others.

4. Dr. A. Ramaswamy,
Prof. of Economics,
Annamalai University,
Annamalai Nagar.

Discussion & Rapporteur's Summary.

Sunday, 19th September.

Theme : A Three Year programme of Research priorities in Tamil Nadu Development.

President : Dr. N. D. Sundaravadivelu,
Vice-Chancellor,
University of Madras.

10 a. m. : President's Remarks.

10.30 a. m. to 1 p. m. : *A Programme of Research Priorities for Tamil Nadu Development.*

Dr. Malcolm S. Adiseshiah,
Director, Madras Institute of Development Studies, Madras - 20.

3.00 to 4.30 p. m. : Follow up Action by Universities and Research Institutes,

July Madras Development Seminar.

The July Seminar paper, Education of Women and Girls in Tamil Nadu by Mr. S. V. Chittibabu, Director of School Education in Tamil Nadu and a summary of the discussion of the paper in the seminar constitute the main article of this issue.

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Second Article.

A second Article "Tamil Nadu Education in the Seventies" also appears in this issue.

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Correspondence.

Two letters on the Summer Workshop appear in this new section.

EDUCATION OF WOMEN AND GIRLS IN TAMIL NADU

by

MR. S. V. CHITTIBABU,

Director of School Education, Tamil Nadu.

Though there is evidence that there were well-educated women in ancient India, records of an earlier system of organised education of girls of all classes probably did not exist. Girls in the upper strata of society were instructed at home in fine arts, religion, philosophy and culture by tutors or pandits specially employed for the purpose. The earliest survey of education is found in Adam's report which gives an account of the educational conditions in the early nineteenth century. Adam found only four women literate in Bengal as against 21,971 men in the total population about the year 1830. Adam was a missionary interested in the spread of education in India. As observed by him the East India Company during the years 1600 to 1857 did not venture to promote education among the women of India and improve their social status, as they felt that the prejudices against such an education were very strong. During the earlier part of the 19th century, however, certain educational institutions were founded and administered by foreign missionaries; others were established by officials of the East India Company in their individual capacity or by non-official Englishmen residing in India. At the same time some native educational institutions also developed or were reorganised on new lines and were run by Indian educationists. Special mention may be made of the Church Missionary Society which opened at Tirunelveli the first of Madras' Boarding Schools in 1821. In 1840 with the assistance of the Rev. Isaac Wilson and his wife, the Scottish Church Society ventured to start six schools for Hindu girls in Madras with a total of 200 pupils. By 1854 there were probably 7000 girls at schools conducted by missionary societies and although the majority of them were Christians, there was still a considerable percentage of Hindus from the higher castes. At the time of the Despatch of 1854 the extent of missionary activities can be assessed from the following table[1] for the year 1851 showing day schools. boarding schools and pupils attending them in British India.

Adam W.: *Report on the State of Education in Bengal (1835 and 1838).*

1. S. Nurullah and J. P. Naik, History of Education in India 1951, p. 178,

Girls Institutions and Enrolment 1851

	Bombay	*Bengal*	*N.W. Province*	*Punjab*	*Central India*	*Madras*	*Total*
Day Schools for Girls	31	26	8	—	3	217	285
Pupils in Day Schools for Girls	1186	690	213	—	62	6768	8919
Boarding Schools for Girls	8	27	9	2	1	39	86
Pupils in Boarding Schools for Girls	139	797	173	35	20	1110	2274
Total number of Girl pupils	—	—	—	—	—	—	11193

It may be noted that Madras led the other States in Girls' education even as early as in 1851.

In 1845 the first girls' school under partial native management was opened in Madras.

Due to Macaulay's Minute of 1835 English came to be established as the official language and medium of instruction in high schools in the teeth of opposition from the orientalists who advocated non-interference with the existing system. The new system of education meant education for the few who would help the British administration. However, this state of affairs was partially remedied by the famous Woods Despatch of 1854 which laid emphasis on primary education. With regard to the encouragement of female education the Despatch observed :—

> " The Importance of female education in India cannot be over-rated; and we have observed with pleasure the evidence which is now afforded of an increased desire on the part of many of the natives of India to give a good education to their daughters. We have already observed that schools for females are included among those to which grant - in - aid may be given.

Between 1854 and 82, therefore, there was a steady expansion of education among women. It may be seen, however, that most of the girls were in the primary schools and the low age of marriage

was responsible for the girls leaving school earlier than the boys. This was also the reason for the slow progress in the higher education of girls. In 1882 there was only one institution in the whole of India, the Bethune School, Calcutta which had six girls in its college department. The training of women primary teachers received some attention during this period. Even then some 515 women only found their way into the training schools for the whole of India and progress was therefore very slow. The prejudice against co-education even in primary schools was still strong as is evident from the fact that in 1882 out of 127,066 girls under instruction, only 42,071 were in mixed schools.

The Indian Education Commission of 1882 went into the question of education of women and suggested the introduction of a system of scholarships, the establishment of hostels, extension of opportunity of secondary education, encouragement of training of women teachers and appointment of women inspectors. Still the progress of girls' education was not striking, though there was some increase in the number of girls at different stages of education. Even in 1904 Lord Curzon noted with regret that the female education was in a very backward condition. The number of female scholars in public schools in 1902 was 444,470 which was less than one ninth of the number of male scholars. In 1910 this number rose to 864,363 and in 1922 to 1,395,803.

The period from 1922 to 1947 is one of significant developments in the history of education. As a result of constitutional reforms in January 1921, education underwent some radical changes. Politically India became much more conscious of her rights and the women's movements in the U.S.A. and England found their echo in India. The liberation of women from ignominy and misery became an over increasingly popular mission. Mrs. Annie Besant who entered politics in 1914 delivered a memorable series of public lectures in Madras entitled 'Wake up India' in which she laid stress on the need to abolish child marriages and to give every woman the opportunity of literacy. Later in 1927 she inspired the foundation and shared with Mrs. Margaret Cousins the leadership of the Women's Association. In 1921 the Madras Legislative Council passed a resolution which allowed women to be enrolled on the electoral register and by 1926 every

other provincial legislature had done likewise. Dr. S. Muthulakshmi Reddi was the first woman returned to the legislature and also the first to be elected as the Vice-President of the Madras Legislative Council (1926-30). It was during this period the work of Mahatma Gandhi was also of great significance. A passionate lover of humanity and an uncompromising foe of injustice in the matter of women's rights, he espoused the women's cause and preached against enforced widowhood, purdah, the dedication of girls to temples, prostitution, early marriage, the dowry system, the economic bondage and marital slavery of women. The Indian reformers also joined hands with him in the battle for women's emancipation. Consequently there was a burst of enthusiasm in favour of women's education. The following tables will show a marked spread of women's education during this period.

Recognised Institutions for Girls: [1]

Year.	*Arts Colleges*	*High Schools*	*Middle Schools*	*Primary Schools*	*Special Institutions.*	*Total*
1921-22	12	120	548	22,579	258	23,517
1926-27	18	45	656	26,621	316	27,756
1931-32	20	218	787	32,564	380	33,969
1936-37	31	297	978	32,273	404	33,983

Enrolment of Girls by Institutions: [2]

Year.	*Arts Colleges*	*High Schools*	*Middle Schools*	*Primary Schools.*	*Special Institutions*	*In unrecognised institutions.*	*Total enrolment.*
1921-22	938	25,130	85,079	11,95,892	11,184	77,580	13,95.803
1926-27	1624	39,858	1,23,892	15,45,963	14,729	90,745	18,16,811
1931-32	2966	75,479	1,70,997	20,93,141	18,981	1,23,120	24,84,684
1936-37	6039	1,14,481	2,16,965	26,07,086	23,027	1,38,833	31,06,431

1 & 2 : Progress of Education in India; Quinquennial Review 1922 — 37, Delhi Bureau of Education, 1886 — 1937. II Vols.

It is observed in the quinquennial reviews of this period that Bengal, Bombay and Madras reported that the desire to educate women was becoming widespread and both the Government and the public paid more attention to the establishment of girls' schools. As per the reports, it is seen that the total enrolment in Madras rose from 3,54,500 in 1921-22 to 8,67,900 in 1936-37 i.e. by about 147.4 percent, the highest in India. Next came Bengal, Bombay, etc. Of the different provinces the percentage of girl pupils to total female population of school-going age was highest (18.4) in Burma. Madras closely followed it with 17.5 percent. When we study the principal distribution of educational expenditure on recognised girls' institutions, we find that Madras spent the largest amount of Rs. 7.39 million during 1936-37. Next came Bombay with an expenditure of Rs. 5.62 million, while United Provinces spent only Rs. 3.93 million. The cost of educating a girl was more than that of educating a boy in all types of institutions

A review of the educational position in 1928 by the Hartog Committee of the Simon Commission is significant. The Committee pointed out the main defects in the system of education and stressed that the number of girls at schools was only 2.38 per cent of the total population and that the literacy of women was only 3 per cent. They believed that the education of women was not properly planned and that a large scale comprehensive drive had to be made, if women were to be suitably educated. This is clear from the following findings and recommendations of the Hartog Committee :

(1) There is great disparity between the education of boys and girls.

(2) The public expenditure on girls, education is still small compared to that on boys' education.

(3) The main obstacles to the progress of the education of women are the conservation and the prejudices of the people.

(4) The progress of education of women differs from province to province. Even in the same province it differs from urban to rural areas or from one community to another.

(5) A whole time woman officer of high standing and experience must be appointed at the headquarters.

(6) The professional education of women at the collegiate level is extremely backward.

(7) Secondary education for girls has been successfully developed in urban areas only,

(8) Primary education of girls is extensive in urban areas but is generally limited and inefficient in rural areas.

(9) Wastage and stagnation exist very largely in boys' schools but their extent in girls' schools is even greater.

(10) The shortage of women teachers, particularly at the primary stage is due to lack of adequate training facilities, the unwillingness of women who are brought up and trained in towns to work as teachers in rural areas and inadequacy of the pay offered.

In spite of such defects the period under review has been noted as the most inspiring period in the annals of Indian education.

The Hartog Committee concluded its Report thus: "We believe" that the difficulties in the way of women's education are beginning to lose their force and the opportunity has arrived for a great new advance. We are definitely of the opinion that in the interest of the advance of Indian education as a whole, priority should now be given to the claim of girls' education in every scheme of expansion".

The period between 1937 and 1947 generally known as the period of Provincial Autonomy was one of the most eventful in the recent history of India, marked as it was by many innovations. Under the Government of India Act of 1935 provincial ministries had a free hand in matters of educational policy. In general the total enrolment of girls in all institutions increased during this period, though the number of institutions for girls did not correspondingly increase, mostly because of the slump in the economy of the country caused by the Second World War. The enrolment in primary schools increased from 2.5 million girls in 1937-38 to 3.48 millions in 1946-47. Madras had the largest number of girls under instruction, i.e. 1.33 millions in 1946-47. This was due to a comprehensive scheme of compulsory primary education adopted by the State. It is in this context that Basic Education assumed a certain importance in certain areas of the State. The scheme of basic education, as conceived by Mahatma Gandhi, was intended to make primary education reflect life to a greater degree and also to make it universal. The Madras Government adopted some special measures to expand primary education, such as (i) the

opening of schools in those places which needed them, (ii) increased grants to local bodies, (iii) additional girls' schools where-ever necessary and (iv) additional teachers in existing schools.

Inspite of these measures the disparity between the boys, and girls' education remained rather pronounced and this was not due so much to lack of provision of facilities for the education of girls as to a lack of general demand for it throughout the country. Wastage, though slightly reduced, persisted. Among the provinces the wastage rate amongst the girls during 1946-47 was highest in Bengal and the U. P. at 87% and 80% respectively and lowest in Coorg at 45%. Madras and the C. P. recorded moderate rates [1].

In regard to Secondary education one notes some progress during this period. The number of high schools for girls increased from 398 in 1937-38 to 725 in 1946-47, i.e. by 82.1%. In Madras province alone the number doubled itself from 74 to 148. Even so it had the largest number of girls at school, i.e., 74000 during 1946-47. The number of arts and science colleges for women in India increased from 32 in 1937-38 to 59 in 1946-47, while the number of colleges for boys rose from 240 to 361. In Madras alone there was an increase of only two in the number of women's colleges during this period. The total number of girls enrolled in colleges for general education both for women and men rose from 6782 in 1937—38 to 20304 in 1946-47, more than half of the girls being in men's institutions. Madras alone had 3351 girls in its colleges. While there were practically no professional colleges exclusively for women, women got enrolled in different professional colleges and schools meant for men. The two professions that attracted women were teaching and nursing. Since teaching was even more popular, there was increased provision for training schools and colleges and the national government took special measures to hasten the supply of trained teachers.

There were 39670 women teachers in primary schools in 1937-38 of which 23000 were alone trained. It will be of interest to note that of these the largest number, i.e. 16000 belonged to

1 Progress of Education in India, Decennial Review 1937-47, Vol. I, page 61.

Madras and most of them, i.e. 14000 were trained. Next was Bombay with 5800 teachers of whom 3000 alone were trained. An increase in the number of middle school and high school teachers among women is noted between 1937-38 and 1946-47. But even then poor conditions of service, low salary and unenviable status accounted for the shortage of women teachers at all levels.

Even though adult education was recognised as a must for the social, political and economic progress of the nation, nothing worthy of note was done during this period with the result the masses of the people remained illiterate and ignorant. Even in Madras adult education did not receive any attention.

However the expenditure incurred on Women's education in India rose considerably during this period from Rs. 31.05 million in 1937-38 to Rs. 66.6 million in 1946-47.

Education of Girls and Women since Independence :

With the attainment of Independence there was an awakening of political and social consciousness among the people. Among the many changes in social life that overtook the country the most striking one was in respect of the status of women. The constitution itself gave women all fundamental rights. Naturally this gave a momentum to the expansion of facilities for the education of women and girls. Consequently the number of girls' institutions and the number of girls under instruction increased perceptibly. The statistics given below will show the phenomenal progress in enrolment of girls at different levels of education between 1950 and 1965.

	1950-51	*1955-56*	*1960-61*	*1965-66 (Estimated)*
1. Enrolment of Girls in Classes I-V.				
(1) Total enrolment (in 000's)	5,385	7,639	11,401	18,145
(2) No. of girls for every 100 boys enrolled.	39	44	48	55
(3) Percentage of girls in schools for boys.	74.8	79.2	82.1	85.0

	1950-51	1955-56	1960-61	1965-66 (Estimated)
2. *Enrolment of Girls in Classes VI-VIII.*				
(1) Total enrolment (in 000's)	534	867	1,630	2,839
(2) No. of girls for every 100 boys enrolled.	21	25	32	35
(3) Percentage of girls in schools for boys.	26.7	51.8	68.9	78.0
3. *Enrolment of Girls in Classes IX-XI.*				
(1) Total enrolment (in 000's)	163	320	541	1,069
(2) No. of girls for every 100 boys enrolled	15	21	23	26
(3) Percentage of girls in schools for boys.	21.0	29.7	36.4	40.0
4. *Enrolment of Girls at the University Stage* (General EDN).				
(1) Total enrolment (in 000's)	40	84	150	271
(2) No. of girls for every 100 boys enrolled.	14	17	23	24
(3) Percentage of girls in boys' institutions.	56.0	53.1	50.2	48.2
5. *Enrolment of Girls in Vocational Courses (School Standards).*				
(1) Total enrolment (in 000's)	41	66	86	120
(2) No. of girls for every 100 boys enrolled.	28	31	25	23
6. *Enrolment of Girls in Professional Courses (Collegiate Standard).*				
(1) Total enrolment (in 000's)	5	9	26	50
(2) No. of girls for every 100 boys enrolled.	5	7	11	14

Source : Ministry of Education, Form A, except for the year 1965—66 estimates for which were made in the Secretariat of the Education Commission.

Let us turn to Tamilnad for a critical review of the progress of girls' education since independence, particularly during the plan-periods. The year 1948-49 began with 15303 elementary schools and today this number has swelled to 31,881. This is undoubtedly an unprecedented development of great significance,

Our elementary schools are co-educational and there has been no resistance to co-education at this level in our State. Every village with a population of 300 and above has an elementary school thrown open to all children irrespective of distinctions of any kind. The following table shows the upward trend in the enrolment of girls at the elementary stage during the period 1947-48 to 1970-71—a trend which is more pronounced than that seen with respect to boys' enrolment.

Enrolment in the age group 6-11.

Year	*No. of girls.*	*No. of boys.*
1947-48	5,75,982	10,55,867
1957-58	10,12,499	18,67,340
1967-68	20,73,354	27,49,665
1970-71	22,20,471	29,30,146

The increased enrolment of girls was possible because of the provision of certain ancillary services intended to attract the girls into schools, apart from the scheme of compulsory education, viz., (1) the provision of free midday meals in elementary schools, (2) the supply of free uniforms, (3) the School Improvement Scheme, (4) the free supply of books and slates to needy children. These ancillary services brought the community closer to the school in a unique manner and rendered the implementation of the compulsory education scheme easy. At present the percentage of girls in Standards - I to V in relation to the number of girls of the age group 6-11 in the State as a whole is 81.5 and that of boys is 106.5.

In the next higher stage, the upper primary, covering standards VI to VIII the enrolment during the period under review has shown a remarkable increase. The number of girls that came into upper primary schools rose considerably since 1956-57 as will be seen in the following table.

Enrolment in the age group 11—14.

Year	*No. of girls.*	*No. of boys.*
1956-57	135,341	342,633
1961-62	233,562	527,975
1966-67	381,484	751,561
1970-71	467,809	850,620

The percentage of children of the age-group 11-14 at school to the total number of children of this age-group is about 55. (70.8 for boys and 39.2 for girls). One cannot fail to notice the wide disparity in enrolment as between girls and boys. The obvious cause is the strong disinclination of the parents to send their girls of the age group 11-14 to the school. Efforts needed to enrol these girls would therefore have to be more concerted and sustained than before.

The Statistics given below indicate the percentage of enrolment of boys and girls in Tamil Nadu and that at the All-India level for purposes of a comparative study.

Elementary Education.

Year.	*PRIMARY STAGE.* *Percentage of enrolment in classes I to V to total population in the age group 6-11.*		*MIDDLE STAGE* *Percentage of enrolment in classes VI-VIII to total population in the age group 11-14.*	
	Tamil Nadu	*§ All India.*	*Tamil Nadu*	*§ All India.*
1950-51.				
B	60.6	59.8	28.5	15.4
G	35.2	24.6	7.9	2.9
End of 1st Plan				
B	73.56	70.3	33.34	20.7
G	37.96	32.4	12.11	4.5
End of 2nd Plan				
B	85.78	82.6	45.18	32.2
G	53.95	41.4	19.82	11.3
End of 3rd Plan				
B	102.3	94.5	63.78	43.5
G	73.08	54.6	30.72	16.5
1969-70.				
B	105.62	N.A.	67.51	N.A.
G	79.09		37.15	
1970-71.				
B	106.5	N.A.	70.8	N.A.
G	81.5		39.2	
Target at the end of IVth plan.				
B	100	97.7	80	36.5
G		71.7	-	15.1

§ Source : Selected educational and Related Statistics at a glance by Education division, Planning Commission Government of India.

The above table will reveal that compared to the percentage of enrolment of girls at the All India level, our State percentage is quite encouraging. Still there is a heavy backlog to be overtaken, particularly at the middle stage so far as our State is concerned. The Fourth Plan target is to achieve 100% enrolment at the primary stage and 80% at the middle stage in respect of both boys and girls put together. Our major task would consequently be the enrolment of more girls than boys in the coming years.

In respect of Secondary Education the progress has not been discouraging. With the opening of more and more girls' schools, the rate of enrolment in the age-group 14-17 has been steadily going up. The number of girls' schools which stood at 142 in 1954 has now increased to 443 in 1970-71 out of a total number of 2599 secondary schools in the State. The following table will indicate the steady rise in the number of girls of the age group 14-17 coming to school.

Enrolment in the age-group 14—17

Year	*Girls*	*Boys.*
1956-57	44,536	159,039
1961-62	77,384	215,417
1966-67	181,063	426,809
1970-71	224,206	473,042

The percentage of children of the age-group 14-17 at school to the total number of this age group is about 35 (22.8 for girls and 47.7 for boys). Here again one sees the low percentage of girls attending secondary schools.

The following table shows the percentage of enrolment of boys and girls at the High School stage in Tamil Nadu and at the All-India level.

Secondary Education (Age group 14—17)

		Tamil Nadu.	All India.
50-51 :	B.	13.1	9.0
	G.	1.9	1.5
End of 1st plan :	B.	17.94	14.0
	G.	4.71	2.8
End of 2nd plan :	B.	22.85	17.5
	G.	7.65	4.3
End of 3rd plan :	B.	41.38	25.2
	G.	17.83	7.8
69-70	B.	45.75	N.A.
	G.	21.67	
70-71	B.	47.7	N.A.
	G.	22.8	
Target by the end of 4th plan.	B.		
	G.	55	

It is quite evident from the above table that the percentage of enrolment of girls during the plan periods is well above the All-India level. Yet there is so much to be done if a sizable percentage of girls of this age-group is to be drawn into our schools before the end of the IV Plan.

In regard to higher education it is seen that there has been a steady increase in the number of educational institutions for women as well as in the enrolment of women students therein both at the all-India and the State levels.

Total Enrolment in Institutions of Higher Education in India 1946—47 to 1970—71

Year.	*Enrolment in Arts and Science Colleges (including Intermediate Colleges)*	*Enrolment in Colleges of Professional and Technical Education.*	*Enrolment in Colleges of Special Education.*	*Total enrolment*
1946—47 :				
Men ...	1,92,000	41,000	—	2,33,000
Women ...	20,000	3,000	—	23,000
Total ...	2,12,000	44,000	—	2,56,000
1960—61 :				
Men ...	6,58,000	2,39,000	15,000	9,12,000
Women —	1,50,000	26,000	10,000	1,86,000
Total ...	8,08,000	2,65,000	25,000	10,98,000
1970—71 :	**(Provisional)**			
Men ...	13,60,000	5,50,000	46,000	19,56,000
Women ...	4,00,000	85,000	20,000	5,05,000
Total ...	17,60,000	6,35,000	66,000	24,61,600

University Education (General) in Tamil Nadu

Year	No. of Colleges.		Enrolment.	
	Men	Women	Men	Women
1956-57	41	15	36,027	6,334
1960-61	42	15	36,077	8,716
1965-66	68	25	63,035	19,503
1970-71	120	41	1,24,248	41,608

Engineering and Technology

	Engineering colleges.		Polytechnics.		Technical Schools.		Engineering colleges.		Pupil in Polytechnics.		Pupil in Technical Schools.	
	M.	W	M.	W	B.	G.	M.	W.	M.	W.	M.	W.
1956-57	6	—	9	—	—	—	2056	—	4165	—	—	—
1960-61	8	—	24	—	16	—	4818	—	6937	—	3601	—
1965-66	9	—	31	3	14	—	7253	13	10639	442+	1186	—
1970-71	12	—	32	3	15	—	7100	41	6660	463+	1423	—

+ In Women's Polytechnics.

Medical Education.

Year.	No. of Colleges	Scholars. Boys	Scholars. Girls	Remarks.
1950-51	6	2,459	574	
1955-56	7	2,708	669	Composite
1960-61	6	3,274	858	State.
1965-66	8	3,918	1,321	— do —
1970-71	8	7,737	1,934	

Training Schools.

Year	No. of Training Schools.		No. of pupils	
	Men	Women	Men.	Women.
1956-57	83	72	10,913	6,855
1960-61	85	62	12,340	8,620
1965-66	75	64	13,270	9,030
1970-71	72	63	7,149	5,827

Training Colleges.

Year	No. of Training Colleges.		No. of pupils.	
	Men	*Women.*	*Men*	*Women.*
1956-57	12	3	918	259
1960-61	12	5	971	405
1965-66	12	6	1,449	732
1970-71	12	11	1,694	1,188

A review of the over-all progress of girls' and women's education in Tamil Nadu in the light of the above data shows that it is not upto our expectations and compared to the progress of boys' and men's education it is still to make considerable headway so as to catch up with the latter within the next five or ten years.

Reasons for the Slow Progress of Girls' Education :

1. The traditional prejudice against the education of girls and women still operates to a considerable extent in rural areas and among the lower and poorer classes of society. In Districts like Dharmapuri, South Arcot, Tiruchirapalli the position is worse. Some parents consider the education of the girls as an unnecessary luxury because they feel that girls after all will always be dependent on men in their capacities of daughters, wives and mothers. Then again, early marriage or betrothal is another contributory social factor.

2. Parents need their girls for assistance either in the family or for the family. Poverty of parents is another factor impeding girl's education. In rural areas, especially, the labour of children is used for several purposes and so their parents who are in great want are compelled to make an economic use of them.

3. Poor school environment is still another cause and perhaps the most important one which contributes significantly to wastage and stagnation. There are still thousands of our elementary schools which have no buildings worth the name, not to speak of their being inadequately equipped.

4. According to present trends, girls are now sent to schools and even colleges in large numbers in urban areas and among them are those who come from the upper classes of society whose

young men would like to marry educated girls. This is not the case among the people of the lower economic groups. In respect of the middle classes the trend among parents is not to educate their daughters too much because they are afraid that educated boys are not easily available to match their educated girls. Therefore, secondary education is considered to be the maximum upto which they think their daughters need go.

5. Distance as a stumbling factor in the progress of enrolment has been controlled effectively in so far as primary education is concerned because no child needs nowadays walk more than a mile. But in the case of secondary education it is still a problem in so far as girls' education is concerned. Parents generally have no objection to sending their boys to schools outside the village but not girls. Therefore the attendance of girls at the middle and secondary stage slumps considerably.

6. As far as Tamil Nadu is concerned primary schools have ceased to be separate for girls and boys for some two decades now and people have no objection to co-education at this stage. But prejudice against mixed schools becomes stronger at the upper primary and middle school stages and in orthodox regions a good number of parents are not prepared to send their daughters to mixed schools where, they think, the atmosphere is quite different from that in their family and the community.

7. Parents complain that even in mixed schools proper and adequate provision of special facilities is not made to take care of their girls. Lack of adequate number of women teachers, want of separate sanitary conveniences, retiring rooms, playing fields etc. are adduced as reasons. It is further complained that not much has been done by way of provision for co-curricular activities suited to girls (e.g.) girl guiding, home nursing, needlework, music etc.

8. A large number of school children are still under-nourished inspite of our midday meal programme which feeds about a third only of the children studying in our primary schools. Continuous illness of pupils has been found adversely to affect their achievement in studies which ultimately leads to stagnation and wastage.

9. Heterogeneity in the age composition of girl pupils in a class even as in the case of boy pupils is another cause of educational wastage. Heterogeneity is caused by admission to the beginning class of a primary school at higher than the normal age or by repetitions in the same class. Obviously students older than the median age are likely to drop out, firstly because they become economically useful to the family, secondly because they feel mentally uncomfortable to adjust with their peers who are very much younger to them in age; and thirdly the curriculam is not suited to meet their psychological needs.

10. Irregular attendance has been found to be one of the most important contributory factors responsible for the phenomenon of stagnation which ultimately leads to wastage. This may be due to many reasons, such as emotional difficulties, lack of interest in education, ill health, dis-satisfaction with school, home circumstances, etc.

As a result of the conspiracy of the above causes there has been considerable wastage in girls' education, particularly at the elementary stage as can be seen in the following table.

Statement showing wastage in Standards I to V of the Primary Schools of Tamilnadu (Girls)

Year.	*Strength of Girls in Std. I*	*Year*	*Strength of Girls in Std. V*	*Percentage*	*Wastage*
1958-59	3,80,406	1962-63	1,60,860	42.28	57.72
1959-60	4,08,405	1963-64	1,76,157	43.13	56.87
1960-61	4,24,058	1964-65	2,01,205	46.35	53.65
1961-62	5,35,005	1965-66	2,21,304	41.36	58.64
1962-63	5,83,054	1966-67	2,32,096	39.80	60.2
1963-64	6,08,567	1967-68	2,43,858	40.15	59.87
1964-65	5,81,118	1968-69	2,66,279	45.10	54.90
1965-66	5,67,327	1969-70	2,71,242	48.24	51.76
1966-67	5,85,665	1970-71	2,83,939	48.55	51.45
1967-68	6,79,082				
1968-69	5,90,040				
1969-70	6,05,855				
1970-71	6,25,146				

It is distressing that there should still be as high a percentage of wastage as 50 and above.

Remedial Measures—Action Programmes.

The slow progress of girls' and women's education has been engaging the attention of the Central Government as well as the State Government and the problem has in recent years been examined in depth by a number of committees: the national Committee on the Education of Women under the Chairmanship of Smt. Durgabai Deshmukh (1958); the Committee on Differentiation of curricula between Boys and Girls under the Chairmanship of Smt. Hansa Mehta (1964); the Committee under the Chairmanship of Thiru M. Bhaktavatsalam which studied the problem in the six states where the education of girls is less developed. Their recommendations have been fully endorsed by the Kothari Education Commission which has underscored the imperative need to treat the education of girls and women as a major programme in education for some years to come and to make a bold and determined effort to face the difficulties involved and to close the existing gap between the education of men and women.

1. By far the most important cause of wastage and stagnation among girls being the conservatism and social backwardness of parents who suffer from social taboos and who have a very low perception of the importance of education, it should be our major task to organise campaigns to enlighten the parents, particularly the mothers of the girls of the school-going age and get them to cooperate with the Education Department and the teachers in the enrolment of girls in schools at all levels.

2. For over two decades our people having been used to co-education at the primary and even middle stage, the need for separate elementary schools for girls as an indispensable pre-condition is generally not felt now. Opening of elementary schools in all villages with a population of 300 and above has resulted in the universalisation of school provision. But as has been already pointed out, any enrolment drive in the next few years will necessarily have to concentrate its attention on the girls who are yet to be brought into our schools. Our State has for long been in favour of separate high schools for girls wherever it has been possible and whenever the minimum strength of girls has been ensured. In recent years the Government has brought a new vigour to bear upon the pursuit of this policy of opening separate

schools for girls' education, though it is still open to girls whose parents have no objection in this matter to avail themselves of co-educational facilities in boys' schools. It is hoped that thanks to this imaginative approach, there will be greater response from the community whose girls need to be educated in high schools.

3. Our State provides for free education to both boys and girls up to the Pre-University Class. Naturally this has had the effect of accelerating enrolment in secondary schools and the Pre-University Classes, irrespective of the economic status of parents. Even then there is the gap between the education of boys and that of girls. To fill this gap a programme for the provision of several ancillary services to help the poor and backward girls is necessary. Our State in this respect has led the way for other States in India to follow. We have the free midday meal scheme for the benefit of poor children numbering about 18 lakhs of whom nearly 8.5 lakhs are girls. The provision made for this scheme in the Budget for 1971-72 is about Rs. 2.56 crores. Needy children receiving midday meals in Standards I to III are given text books free of cost. Nearly 4.5 lakhs of girls are helped in this way. Free slates are also supplied to them in Standard I. Following the implementation of the school meals scheme, the Department of Education initiated efforts in the direction of providing free clothing to poor children. The reason is not far to seek. Even when free meals were supplied in schools it was noted that a number of children, particularly girls of tender age fought shy of attending school for want of proper clothing. So public provision was utilised for providing lakhs and lakhs of children with free clothing. So far over 12 lakhs of children of whom nearly 6 lakhs are girls have benefitted by the supply of this gift of free uniforms. Thanks to this scheme girls' education has received a vital stimulus. In the light of the experience gained, I suggest that the triple attraction of free midday meals, free books and slates and free uniforms should be provided in a bigger way, at least in respect of all the poor girls who need to be schooled at all levels and a sizable allocation of funds in the State Budget should be made for this purpose.

4. Children especially are by nature attracted to the school beautiful, even as they are repelled by clumsy school houses,

broken furniture, faded pictures and loathsome surroundings. Thanks to the School Improvement Movement we have very largely succeeded in harnessing community support for the betterment of the physical conditions of our elementary as well as high schools over a period of years now. Apart from this our State Government has now liberally provided for school building schemes under the IV Plan with a view to enabling schools to function in more congenial physical environs. For the year 1971-72 alone nearly Rs. 1.5 crores has been set apart and this is bound to solve the problem of inadequate and unattractive accommodation in schools to some extent. Yet it will certainly contribute to the acceleration of the pace of expansion of girls' education, if some more provision is made for the most expeditious completion of building schemes in a matter of two to three years.

5. It has been suggested that more and more women-teachers should be employed in schools to redress the imbalance in the staff composition which is said to be weighted in favour of men-teachers now. But then the number of women-teachers available for employment is not commensurate with our needs. In order to meet the demand for women-teachers in both primary and secondary schools the provision for the training of women-teachers has been suitably augmented in recent years. The following table will show the number of women-teachers working in our schools at present as compared with the number some years ago.

Number of Teachers

Year.	*Men.*	*Women*
1956-57	76,618	33,917
1960-61	95,023	45,470
1965-66	1,29,330	68,784
1970-71	1,40,696	80,036

Number of Teachers by Qualifications (excluding specialist teachers)

Year	*Graduates.*		*Matriculates.*		*Non-Matriculates*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
1956-57	5,360	1,316	27,883	9,060	42,523	23,025
1960-61	7,391	2,006	40,977	14,357	46,324	28,832
1965-66	13,358	4,589	56,993	23,246	58,146	40,492
1970-71	15,724	5,835	63,153	27,295	60,762	46,052

In this context it is well to remember that in Tamil Nadu the rules relating to the recognition of elementary and secondary schools stipulate the employment of only trained teachers. Only, if trained teachers are not available as in the case of women, sometimes untrained ones are permitted to be employed. Consequently the proportion of trained teachers in service including women teachers is very high in the State. It is nearly 99 per cent in primary schools and 90·5 per cent in secondary schools.

But the problem is to get more women teachers to work in rural areas than in urban areas. The enrolment of rural children, particularly girls, is dependent on the enthusiasm and interest of the teachers. Because of lack of housing facilities women teachers appointed to serve in rural schools are hesitant to accept their job. It is for this reason quarters have been constructed for them in rural parts. During the second and third Plan periods, 164 and 726 quarters respectively were constructed. During the last 4 years 432 quarters were reported to have been constructed in Panchayat Union areas. The Scheme is continued in the Fourth Plan period. A sum of Rs. 5 lakhs was allotted for each of the years 1969-70 and 1970-71 for women's quarters. An outlay of a similar sum of Rs. 5 lakhs is provided for current year. It is hoped that this scheme of construction of women's quarters will be expanded expeditiously so as to cover all the rural areas where we have these tens of thousands of schools which require women teachers on their staff.

Then again, at the middle and high school stages the appointment of more and more women teachers is earnestly encouraged now in mixed schools, depending upon the strength of girl pupils. Even in these institutions where a comparatively small number of

girls are admitted, particularly in rural areas, it is insisted that there should be at least one woman teacher on the staff to attend to the needs of girls in primary schools.

6. The setting up of Parent-Teacher Associations, Mathar Sangams and such other useful agencies in villages will give the needed stimulus to girls' education. The Parent-Teacher Association, particularly, can play a most effective role in bringing the community and the school closer and in inducing parents to send their daughters to school, while at the same time taking a live interest in the development and growth of the schools in which their daughters study.

7. The question of regional imbalances within the State in the matter of expansion of girls' education has been causing us some concern. It has already been seen how girls' enrolment in schools needs to be stepped up in general. But a district-wise-analysis of the figures relating to this enrolment pinpoints the uneven expansion and growth of girls' education as between Districts. The following statistics will help us in critically reviewing the position.

Percentage of Girls' Enrolment in Different Districts in 1970-71

		Percentage of enrolment in classes I to V to total girls' population in the age-group 6-11	*Percentage in classes VI to VIII to total girls in the age-group 11-14*	*Percentage of enrolment in classes IX to XI to total girls in age-group 14-17*
Madras	...	84.4	70.1	50.7
Chingleput	...	82.1	37·7	20.4
North Arcot	...	73.2	30.9	16.1
South Arcot	...	68.6	25.4	11.5
Dharmapuri	...	64.3	18.7	9.3
Salem	...	61.7	29.2	16.6
Coimbatore	...	68.2	34.1	21.9
The Nilgiris	...	80.1	46.6	28.0
Madurai	...	80.0	37.9	22.0
Tiruchirapalli	...	76.5	33.2	19.3
Thanjavur	...	78.9	35.7	19.2
Ramanathapuram	...	90.0	36.5	17.9
Tirunelveli	...	87.0	41.6	20.2
Kanyakumari	...	99.4	67.0	52.7

The percentage of enrolment of girls in primary schools in all the 14 Districts, except the Kanyakumari District, is far below the combined State percentage of enrolment of boys in schools. Even so the percentage of enrolment in middle and high schools in all Districts except Madras and Kanyakumari is far from satisfactory. It becomes therefore, imperative that such wide gaps as exist now as between one District and another are eliminated by equalising educational opportunities through conscious and concerted efforts.

In this connection the composite index given in the following table which is the arithmetical means of computing the percentage of enrolment of girls of different age-groups will be helpful in identifying the advanced and backward districts.

TABLE :

Comparative Statement of the Composite Index

Name of the District		*Composite Index*	*Rank*
Madras	...	68.4	II
Chingleput	...	46.7	VI
North Arcot	...	40.0	XI
South Arcot	...	35.2	XIII
Dharmapuri	...	30.8	XIV
Salem	...	35.8	XII
Coimbatore	...	41.4	X
The Nilgiris	...	48.2	IV
Madurai	...	46.6	VII
Tiruchirapalli	...	43.0	IX
Thanjavur	...	44.6	VIII
Ramanathapuram	...	48.1	V
Tirunelveli	...	49.6	III
Kanyakumari	...	73.0	I
State (Index)		61.5	

It will be seen from the above composite index that Kanyakumari occupies the highest place, and Dharmapuri District the lowest. The Districts which are above the State index may be classified as advanced Districts. Madras and Kanyakumari Districts come under this group. The Districts whose index is

between 45 and 60 may be classified as partly advanced Districts, such as, Tirunelveli, Ramanathapuram, the Nilgiris and Chingleput. The other Districts excepting Dharmapuri may be regarded as backward Districts. Dharmapuri is the most backward District since its composite index is only 30.8, which deplorably falls short of the State index by 50%.

The conclusions indicate that special steps have to be taken in future to improve the girls' education in the last two groups. Then only can the regional imbalances be reduced to the maximum extent possible.

8. It has been suggested that with a view to implementing the special programmes for strengthening and developing girls' education, more women-inspectors and supervisors should be appointed in the Department of Education. A separate wing under a woman-officer of the rank of at least a Joint Director is felt necessary so that she can devote all her thought and attention to the subject of girls' education; with a band of subordinate women-officers at different levels to effectively organise campaigns for the quantitative expansion and qualitative improvement of girls' education. This suggestion may be studied and some feasible scheme may be worked out.

9. There is then the problem of the differentiation of curricula between boys and girls. This was examined and discussed threadbare by the Committee on Differentiation of Curricula for Boys and Girls set up by the National Council for Women's Education is 1964. The Committee has made some interesting recommendations. Some of its important recommendations are :

(a) Co-education should be adopted as the general pattern at the elementary stage. As a transitional measure separate primary or middle schools for girls may be provided where a demand for them is put forward with a view to increasing the enrolment of girls. At the secondary and collegiate stages there should be full freedom to the managements and parents either to evolve common institutions or to establish separate one for girls.

(b) No differentiation should be made in the curricula for boys and girls at the primary stage, The traditional attitude to regard certain tasks as 'manly' and others as 'womanly' is generally built up in early childhood through social atmosphere. Simple needle-craft, cooking, music and dancing introduced in primary schools for boys and girls alike will incidentally counteract these influences and build new and healthy attitudes.

At the middle school stage also there should be a common course for boys and girls and this should include a core curriculum of home science. All middle schools should provide for the teaching of a craft which is most suited to local conditions and wherever possible for the teaching of more than one craft.

In all middle schools we should have mixed staff. Wherever necessary and possible transport facilities should be provided to girls to enable them to attend middle schools which may not be easily accessible from their places of residence.

The general courses of secondary education should not attempt to give vocational competence; but craft or handwork or productive labour of some type should form an integral part of such courses. Vocational courses, such as, Home Science, Food preservation, Drawing and painting, Interior decoration, Music and fine arts, costumes designing and Dress making etc, Dairy farming, draughtsmanship, accountancy, Businessmanagement, etc. should run as parallel alternatives to the general courses of secondary education with a view to preparing boys and girls for different vocations in life. They should also be sufficiently diversified to meet the requirements of girls.

Universities now provide for a large variety of courses which meet most of the special needs of girls and women. But there is still scope for further development. It is the responsibility of Universities to prepare teachers for secondary schools. They must, therefore, provide courses at a higher level in all the subjects which have been introduced in the diversified curricula at the secondary stage.

Provision for vocational courses at the secondary and higher stages of education is far from adequate in the existing pattern of

education and constitutes one of its major weaknesses. Immediate attempts should, therefore, be directed to expand this provision to the largest extent possible both for boys and girls. It is absolutely essential to relate the provision of vocational courses at the secondary and higher states of education with man-and-woman-power requirements of society.

In our State our curricula are more or less patterned on the lines suggested by the above Committee. But then in regard to diversified courses for the benefit of girls they are not as many as have been suggested, primarily because of the expenditure that such a variety will entail. This is a matter that needs to be looked into and a special programme of action needs to be devised.

10. If education is to be attractive, meaningful and useful to women, it is necessary to open more avenues of employment opportunities to the girls who stop at different levels of education—S.S.L.C., P.U.C. and Degree. For this, careful educational planning should be done as an integral part of general planning particularly man-power planning. An estimate of the demands for each profession should be made out for the next 10 or 15 years and the number of women who should be trained for each profession every year should be worked out to meet the demands. It is expected that in the coming years greater enrolment of girls in schools, the supply of women-teachers would require to be augmented. To this end there should be a thoughtfully planned strategy of development of training institutions for the preparation of women-teachers for elementary and secondary schools. Women's Polytechnics and Industrial Training Institutes should provide for such courses as architectural designing, radio servicing, telephone operation, tailoring and dress-designing, cookery, etc. More Balwadis and pre-schools should be started for absorbing the trained women-teachers. Women who have passed the S.S.L.C. examination may be trained for such occupations as nursing, short-hand and type-writing, care of creches, teaching adult women, etc.

11. Lastly, if our major programmes for the development and growth of girls' and women's education are to bear fruit, the problem of adult illiteracy will have to be tackled. To liquidate

illiteracy on a mass scale is no easy task. A State campaign, so to speak, needs to be engineered and directed with a firm faith in the cause undertaken, notwithstanding the expenditure it involves and the challenges it posed. Dr. Malcolm Adiseshiah has recently given us a master design for functional literacy which, if implemented by the State Government in co-operation with all social and educational agencies, service-minded individuals, voluntary organisation, due provision being made in the budget year after year on the lines suggested in the design, is bound to transform our society for the better and create the right climate for the successful operation of our many developmental schemes in the cause of women's and girls' education.

Before concluding I would like to reiterate what the Kothari Education Commission has said while commenting on the strategy that needs to be adopted for solving the problems encountered in the field of girls' education. The strategy, it says, needs to take two forms. The first is to emphasise the 'special programmes' recommended by the National Committee on Women's Education and the second is to give attention to the education of girls at all stages and in all sectors as an integral part of the general programmes of expansion and improvement of education. Special schemes should be prepared and the funds required for them should be provided on a priority basis. In this context the special financial assistance of the Central Government is of vital importance.

Both at the centre and in the States there should be a special machinery to deal exclusively with all the issues connected with education of girls and women. It should bring together officials and non-officials in the planning and implementation of programmes for women's education.

Deliberate and unremitting efforts to overcome the obstacles, the formulation of policy with careful adjustment of means to ends and a generous provision of money, institutions and personnel to make amends for past lapses—these are tasks that we should be prepared to shoulder now and in the immediate future. As has

been observed by the Indian Statutory Commission way back in 1929 " the whole case for women's education rests on the claim that education is not the privilege of one sex, but equally the right of both, and that neither one sex nor the other can advance by itself without a strain on the social and national system and injury to itself. "

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In the discussion of the paper at the Seminar on Thursday July 29, chaired by Mr. M. S. Appa Rao, Publisher, the great progress made in Women's Education in the State and the plan for its further improvement and expansion were noted with satisfaction. The two problems that the Education of Women and Girls as described in the paper are the very serious and heavy wastage at the primary level ranging from 51·45 percent to 60·2 percent and the relatively lower percentage of enrolment of girls in the other levels of education.

In the discussion of these two problem areas, the purposes of education of women and girls were referred to as being (a) means of helping them to become agents of change and progress and (b) as a means of securing gainful employment. Both these purposes would require change in the methods and schedules of education and methods and timing of employment of women. One way to deal with the very serious problem of the dropping out of girls from primary schools would be to organise learning courses and educational programmes at times when they are free from work in the home or the farm, carrying instructional programmes to the homes and employing the radio as a simple and effective means of education of women and girls. This means that gradually the current sharp division between school education and education in the home, farm, or other places of work should be abolished. Education is a continuum which can be had not only in the school but also and equally off the school. The present educational programme of girls is too heavily concentrated on the school as being the only instrumentality of instruction. The plan to increase the provision of free books and slates, free school uniform and free midday meals rests on untested assumptions in which the school is the centre.

The other purpose of women's education is to help them obtain employment and contribute to development and progress. In this connection the very serious reduction amounting to nearly 50 percent in the number of teachers both men and women being trained during the last 5 years was noted. This heavy reduction in the training of teachers is due to the growing unemployment of teacher graduates. It was suggested that the training programme should contain more supervised practice teaching as one means of increasing the employment potential of the teacher graduates. More generally whether it be in polytechnic education, medicine or teaching it was proposed that a flexible system of women's employment would provide a corrective to reducing the intake of women students in higher and professional institutions. An employment system could be devised under which women are first employed for a period of 5 or 6 years after they are 20, then released for discharging their marriage and family responsibilities including the rearing of children, and employed after they are 35 or 40 years of age. There is also the prospect of employing a large number of qualified women on an honorary or semi honorary basis particularly in the teaching and medical professions. There was general agreement that the goals of women's education need to be rethought and redefined and the means and methods of their education and employment reordered and reorganised.

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TAMIL NADU EDUCATION IN THE SEVENTIES *

The Occasion

This is a triply significant occasion. First any meeting of Asiriars, of Teachers, of men and women who are devoted to the propagation of knowledge and the service of wisdom is significant. In a gathering of the wise, there is priceless treasure and in your gathering there is such price and treasure. If I may adapt a well known statement to this occasion, I would recall that the destiny of Tamil Nadu is being shaped in her class rooms. Second, this is the 60th such gathering, what is commonly called the diamond jubilee of your meetings. Shashtiabdapoorthy is more than a date or a calendar event. It represents both a high water mark of achievement and a need to concretise and move further forward that achievement. Third we are meeting after the acceptance and implementation by the Government of the report of the Second Pay Commission. I know that there are some individual or group reservations about certain specific recommendations in the report. The Government itself has taken into consideration some of these anomalies in its decisions with regard to the pay of particular groups of teachers. I myself have an overall reservation about the report. My regret is that our economy has suffered such a bout of inflation that we have had to have a Pay Commission. The report's recommendation are a needed compensation against inflation but they are also a generator of further inflation unless there is a very rapid increase in production and productivity. But the significance of the Second Tamil Nadu Pay Commission's Report and its acceptance and implementation by the Government is much wider. It is one part of the vital issue of the status of the teachers on which all education depends. Our Government and the Governments of over 60 countries have adhered to the UNESCO/I. L. O. International Convention on the status of teachers. And so we meet at a time when a small but significant step has been taken in accordance with that convention to ensure a renewed recognition and some enhancement in our status as teachers.

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* Extracts from the Presidential address by Dr. Malcolm S. Adiseshiah to the 60th State Educational Conference held at Salem on 11 June 1971.

These are internal factors. In addition we as educators are participants in two international events. We have just ended 1970 which the United Nations and UNESCO proclaimed as the International Education Year. Joining with other states in India and all countries of the world, we used the year as a period of reflection on the state of education, as an opportunity to promote certain educational ideas and as an occasion for deciding to move forward in new directions. The other event is that with the start of this year 1971, we along with all other countries of the world have joined in launching the Second United Nations Development Decade, under which we have set ourselves certain quantitative and qualitative educational targets that should be achieved in the seventies.

Against this double back-ground of this occasion which includes the responsibilities that we have taken upon ourselves in the International Education Year and the Second Development Decade. I suggest that we examine the manner in which education in Tamil Nadu can move forward and the part that each of us, teachers, can play in this move forward.

Our Present Educational Situation

First let us take stock of where we are at present. To what extent does our present educational situation conform to the twin demands enshrined in Article 45 of our Constitution and reaffirmed during the International Education Year and Second Development Decade?—the demand of democratization and the demand of regeneration, of quantitative expansion and qualitative reform, of schools for all and education through schools.

The Gains

Tamil Nadu's educational record is a proud and impressive one. We started the Sixties with an annual education budget of Rs. 15 crores and we ended last year with Rs. 67 crores, which is a four-fold increase or allowing for inflation a three-fold one. This is no mean achievement. It means that we are spending 23 percent of our State budget or 3 percent of the State income on education. The International norm is around 14 percent. We are the second highest educational spenders among the States,

spending Rs. 9 1/2 per Tamilian on education. (For the current year, the legislature has voted an even higher budget—over Rs. 83 crores, increasing all the indices just referred to). Our enrolment record is equally impressive. According to the *கல்வித்துறை மானியக் கோரிக்கை*-13 (1970-71) 93 percent of our children in the age group 6-11, 55 percent of the age group 11-14 and 35 percent in the age group 14-17 are enrolled in our Schools. As the கோரிக்கை says "இதைக் காணும்போது உள்ளத்தில் உவகை *பிறக்கின்றது*" I think we can endorse its hope that before the end of the 4th Five Year Plan we will attain one part of the Constitutional Directive and have all our children of the age 6-11 in schools, together with 80 percent of the 11-14 year olds and 55 per cent of the 14-17 year olds. This will mean that within the next three years we will be enrolling a further 1,50,000 school pupils and recruiting 2720 additional teachers.

To this school education progress, must be added the literacy achievement which has just been recorded in the 1971 census. In the 10 years between 1961 and 1971, our literacy percentage has increased from 31.41 percent to 39.39 percent. Next to Kerala, Tamil Nadu has the highest literacy percentage. Over 5½ millions of our people have become literates in the decade, and what is particularly heartening is that the literacy progression has been equal for both men and women in our State.

Thus all our quantitative educational indicators, our enrolments, the number of schools—primary, middle and higher, the number of teachers employed, the number of school buildings, the number of literates and the State budget for education all are expanding and exploding. The democratization of education in Tamil Nadu is a reality.

The other educational imperative of qualitative improvement, of educational regeneration and reform is also beginning to be recorded in the State. All educational reform is an out flow of educational and pedagogic research and the State Institute of Education has the potential both for research and its extension in teacher education. Similarly the qualification of our student teachers is being constantly raised and there are continuing programmes to upgrade and improve the qualifications of teachers

in service. So too is the improvement in science teaching. Science is the means of increasing and expanding our horizons of knowledge: education is the instrument for its application and diffusion. If in the western countries there is the danger that science advances are outstripping educational growth, in Tamil Nadu science is relatively absent or at a standstill to our education. But this is self defeating because Tamil Society is not standing still. It is changing every day and in every way and so we should welcome the revised pattern of secondary school education that provides for electives and for the learning of modern science systems, and for the strengthening of laboratories, libraries and workshops. As part of this educational regeneration, we should also welcome the pilot terminal training programmes of pupils in the age group 11-14 and the school complex plan. Probably in the technical education area, the regeneration movement is strongest with diversification of courses, curricular planning, reorientation of relations with industry and the quality improvement programmes for the staff run by the Technical Teachers Training Institute, Madras.

Thus we can be proud of the record to date of the quantitative expansion and the beginnings of qualitative improvement of Tamil Nadu education. As the கல்வி பற்றிய கொள்கைக் குறிப்பு, 1970 states "கல்வியின் சிறப்பை, ஏனைய மாநிலங்களைவிட, தமிழ் நாடே அதிக அளவில் அறிந்துள்ளது என்பது கல்வித் திட்டத்திற்காக ஏராளமான நிதி ஒதுக்கம் செய்யப்பட்டிருப்பதிலிருந்து புலனாகும்."

Set-Backs

On this solid base of our positive achievements we can also look at the weaknesses and failures of our educational system in Tamil Nadu. It is this double perspective which will show us the lines along which we should move forward in the Seventies.

The first weakness is that we do not have official statistics and critical appraisals concerning the weaknesses of our educational system in Tamil Nadu. We have built up a tradition that in order to ask for and obtain funds from the legislature, we must present only the positive side and the achievements in our educational system. This means that in order to identify the weak points in

Tamil Nadu Education, we have to rely on general information from all India data, such as the report of the Education Commission or the recent NCERT study on the sociology of our education or international sources on the one hand, and our own personal knowledge and experience as teachers on the other.

A second weakness is the waste in our educational system. We invested Rs. 67 crores last year and will be spending over Rs. 83 crores this year, on our education. Is every rupee of this investment yielding a rupee's worth of results in terms of educating our children? Let us take primary education. In 1970–71 we spent Rs. 30 crores (a little less than 50 percent of our total educational investment) on 31,706 schools in which 63 lakh pupils (93 percent of the age group) were enrolled. There are four questions that I wish to ask here. (a) How many of the pupils attend the school every day and are not simply names on the school register? (b) How many of the pupils who enter the first year continue till the 4th year and then on to the 8th year? (c) What is the age composition of the pupils entering the first year? (d) What is the rate of repetition in the schools? I do not have official information on these four key questions for Tamil Nadu, but using the sources I referred to earlier, here is the picture. (a) Ten to twelve percent of the pupils on the rolls is bogus enrolment. The school registers are padded by an average of 10–12 percent. (b) Of one hundred pupils who enter Class I, 45 boys and 35 girls are still at study in class 4 and 30 boys and 17 girls in Class VIII (In Tamil Nadu in 1964–65, 13 lakhs pupils were enrolled in standard I and 6.7 lakhs of that age cohort arrived in Standard V in 1968-69). (c) 49 out of 100 pupils in Class I are in the age group 8–12 and above. (d) 40 percent of boys and 47 percent of girls repeat the first year. All this adds up to a rather high rate of loss and waste of our investment in primary education. If we take the first question, bogus rolls, we are losing about Rs. 3 crores. If we take the second question, drop outs, we are losing Rs. 6 crores, if we take the third question, over age, we are losing Rs. 1 crore and if we take the last question, stagnation, we are losing Rs. 2 crores. So if the purpose of the Rs. 30 crores investment in primary education is to turn out, at least 15–20 lakhs of 4 year educated boys and girls every year, under our present system we are losing anything

between Rs. 2 to 6 crores and the equivalent man hours and intellectual efforts of our teachers. The losses in the other levels of education are quantitatively less but equally serious. I was going to ask whether we would tolerate this rate of loss, 10 to 30 percent in any part of our lives in our personal or family business, in our firms or farms. But with the record of our public sector undertakings, I am afraid to pursue the question.

- The causes for this waste in our educational system are known to us: (a) the overlapping of the work day with the school day, against the back-ground of our poverty; (b) the unsuitability of our curricula, which refers to the irrelevance of our education; (c) the contradictory views of teachers and parents as to the purpose of education, the NCERT study showing that teachers stress the cultural purposes and parents the economic and employment objectives of education; (d) a wrong system of examinations and promotions, which rewards memory and not learning ability. A tragically summary epitome of these causes was highlighted when I was recently in Perianaickanpalayam, Coimbatore District visiting an Applied Nutrition Programme. In that pre-school child feeding centre, I found 70 children of the age group 7–12 waiting with their little brothers and sisters in the age group 1–5 between 10 a.m. and 1 p.m. every day to take advantage of the fortified cereal programme that was being run there. One girl had been to school for two years and another for one. None of the others had been to a school. The few parents present said that they could not see the point of sending their children to school because (a) what was taught there was of no use to the child later in life, (b) the child had to look after the newly born baby who came in every one or two years and (c) the child had to work in the field or in the kitchen to enable the father and the mother to earn a daily wage.

A third weakness of our educational system is, as just stated, the result of the poverty of our State and our Country. We well know that wastage anywhere is a symptom of a disease and not the disease itself. If a farmer is losing 40 percent of his investment, it is because of wrong seed, or poor fertiliser or lack of farm care etc., So too the causes of educational wastage are educational and societal in the ratio of 30 : 70. As long as our

society is poor, as long as our social structure is rigid and sluggish, our educational system will reflect that poverty, that rigidity and that sluggishness. In fact 70 percent of our educational weaknesses can be traced to this societal cause. In a six nation school survey conducted in Europe recently under the auspices of the Organisation for European Co-operation and Development, (covering such economically and educationally advanced countries as UK, France, Switzerland, Sweden, West Germany and Belgium) it was found that 40 to 52 percent of the learning achievements of the school pupils were traceable to genetic factors of innate intelligence, 23 to 59 percent to social background and a mere 6 to 22 percent to the school and pedagogic factors of content of curricula, teaching techniques, educational technology and text books. It is in this poverty cause that we must include its most terrible educational impact, mal-nutrition and protein deficiency. The United Nations Protein Advisory Group tells us that 20 percent of all children under 5 in Asia, Africa and Latin America suffer from protein malnutrition and 12 million of them die annually. These estimates are on the optimistic side. In our country the Indian Institute of Public Opinion in a recent survey computes that 326 million of our people are subject to malnutrition, that 50 million die of it and 82 million suffer from protein deficiency which results in irrepairable brain damage to them. This means that no matter how qualified the teacher, how excellent the school programme, how innovative the curricula and however regular the midday meal, the child can never attain his potential as a learner. Poverty is all pervasive. It is reflected in the school, its poor and drab appearance, its derelict library and workshops and its rows of dreary furniture.

A fourth set of causes is educational — our curricula which does not educate, our examination system which does not test learning ability or achievements and our outdated management system which is lost in the current educational explosion. On this I do not need to go into too much detail, as we are all familiar with these internal educational weaknesses. The Perianaickenpalayam comment keeps ringing in my head : "What was taught there was no use to the child later in life." The report of Education Commission uses more sophisticated language : "The lack of proper articulation between education and life and the

poor capacity of the schools to attract and hold students." With regard to the irrelevance of our curricula we must distinguish between two factors. First there has to be a judicious combination of subjects and disciplines-language and communication, information on our land and our origin and the rationality of life - the three Rs., history and geography and science. There is the problem here of combination, balance, juxtaposition, relevance to each school and its surrounding society and the learning path of each individual student. From this point of view our curricula has many short-comings. In fact while our society is changing so rapidly, the green revolution, the transportation expansion, the transistors, use etc., changes in educational programmes proceed at a glacial speed. It is easier to change a village sudukadu than to change the village school courses. Ten years ago from Unesco, I provided the NCERT in Delhi with a team of experts and equipment to help in modernising science teaching in our secondary schools; 1200 expert man months and 5 million dollars of scientific equipment, later I find not one Tamil Nadu Secondary school which has benefited from this programme. The other problem relates to our techniques and method of teaching and the examination system and its rewards as the major, almost sole purpose of our education. The method of teaching that we follow is the classical one of instruction and information imparting. The technique of learning is one of listening passively and noting down all that is said and memorising what has been taught. These methods are not really educating our children and adults in Tamil Nadu nor are our examinations an objective measure or test of our learning. Our management system which was devised for a time when knowledge was relatively stable and 10-20% of the age group were in schools, is totally unable to administer the present system, care for the growing number of teachers and guide the reform movement so urgently necessary.

Finally we are continuously widening the gulf between school and out of school education, between formal and non formal training and as a result both suffer. While in the school area we claim that 93 percent of primary school age children are in school (I have raised 4 questions on this claim), we still have 61 percent adult illiterates in Tamil Nadu. It is not only that our literacy and adult education programmes have not made the quantitative

progress which our school programme has. If we maintained in the sixties the same literacy rhythm as in the fifties, we should have had 19.18 million literates instead of 16.19 million reported in the 1971 census. Thus our out of school education and training programmes are slipping and this slippage is reinforced by the separation that we continue to make between school and out of school education. The separation simply reinforces the weaknesses of each. The NCERT study reveals that less than 25 percent of our high school and college students are drawn from our illiterate homes. Illiteracy thus perpetuates the past and present educational discrimination against the 61 per cent Tamilians. For our adult programmes this is the more serious as we are no longer dealing with pre employment education but with the uneducation and miseducation of our agricultural and industrial workers, the thews and sinews of our society.

Towards an Expanded and Improved System of Tamil Nadu Education

Against this balance sheet of our education achievements and set backs in Tamil Nadu I have some ten suggestions for our reflection in regard to the seventies.

School Hours : My first suggestion refers to school hours. Should we not examine and adapt the hours of schooling to each school's particular situation and needs ? I know that a change in school hours causes inconvenience to the teacher and is not very popular with us teachers. But the issues at stake are serious. It is the education or uneducation of our children. At present we are working our schools on the models of the rich countries, where there is a clear distinction in time between study and work, between academic preparation and employment. There the first 18 to 20 years are set aside for study and the rest for work. In our State and Country, with their grinding poverty which is likely to stay with us for a few more decades, can we stop expecting our work burden and schedule to follow the school rhythm and make instead the school time table follow our work time table ? This means that the students should be given an option of attending school when they are not at work. In order to introduce this change smoothly and to avoid introducing new discriminations in the rural scene, such a shift system in school timings can be intro-

duced in selected urban and rural schools to begin with, with appropriate additional compensatory pay to the teachers involved. This would be a beginning in making the school hours fit in with the family needs in our poor urban and rural areas, and in improving our real enrolment and retention of pupils.

School Programme: My second suggestion refers to reformed school programme. The reform calls for flexibility and decentralisation. A certain amount of flexibility in the syllabus and teaching programme of each school is needed. There are certain core subjects that should be taught in all schools-language and communication, society and its history, the environment and its meaning. While for certain of these subjects like Tamil, Arithmetic, history and geography and subjects of international understanding, and science, there could be uniform texts and teaching materials, for all other subjects each school should be allowed to develop its own teaching and learning materials based on its local flora and fauna, local occupations and the particular interests of the teachers and aptitudes of the pupils. This would give the teacher the kind of incentive and responsibility for the education of his pupils which he lacks today. I am in effect suggesting that the teacher be given responsibility for educational reform and innovation both at the level of the individual school and of the system generally in the State. No school programme reform is ever generated at some far away centre whether it be Unesco, Delhi or Madras City. No one is more qualified to plan and introduce what we call quality education than the teacher in the school, who knows at first hand what quality means and who has to exemplify and practise it. Such flexibility and limited autonomy in developing each school's programme, will make the school more relevant to the pupils and maintain and retain their interests.

Learning Paths: My third suggestion is that our schools should follow the learning paths of each individual pupil. This means first that the class must be manageable. We have various norms to ensure manageability e.g. a teacher pupil ratio of 1 : 35 for primary schools etc. Second education in the class must follow the learning aptitudes of each pupil. This will avoid the double dangers of pitching the learning path at that of the dullest

student, what I call the L. C. M. error., or that of the brightest student, the G. C. M. error. Third for this disaggregative learning, it is necessary simply to follow all methods which promote self reliance, seeking and searching, inventiveness and innovation mindedness. At the early educational stages, this would mean following the methods we follow in games. All of us love games and so avoid boredom. All of us learn when we play games. We learn what the object is. We learn how to master it. We learn how to avoid errors and when we make one, how to recover from it. In games we are really learning and learning all by ourselves. Finally such learning while centred in the individual will also promote a team spirit, the spirit of unity and solidarity which is one aim of all education. In using the games method at the primary level, we will also be abolishing the tragic division between work and play, grounded in such half truths as, all work and no play makes Jack a dull boy. What our education must discover and put into practice is that work is play and play is work. In that way all in school will be learning in his own individual way.

Educational Technology : My fourth suggestion particularly for the secondary, technical and higher education stages is for the use of technology in the educational system. Technology has entered all our life in Tamil Nadu. We have just been through the elections where we saw the most effective use of the microphone, the loud-speaker, the radio, the film the illustrated wall paper and the Jeep in every village, town and city. We are witnessing the technological packet of hybrid seed, fertilizer, pesticide being applied to the cultivation of paddy, cereals, pulses, cotton and groundnut in what we have come to call the green revolution. We will be using two atomic stations in the State to meet our electricity requirements. In our Integral Coach Factory, our Boiler Plant, our fertilizer and leather industry, we change and modernise our machines regularly and adopt the latest techniques in our Industrial Estates. Why is it that only in our schools and colleges have we kept out all technology? Why are we still at the pastoral and handicraft stage in education? To reduce our educational losses and improve our quality, we must now modernise our system, introducing appropriate technology. I suggest that starting in our Polytechnics and Engineering Colleges, going on next to our University colleges and secondary schools,

we use such technologies as are available to us—such as programmed instruction, films and filmstrip, radio and closed circuit T. V., and where available, as at our I. I. T. and advanced centres, computer assisted learning. Such technology should be welcomed by the teacher. It cannot replace him but will simply be an effective tool in his hand. It will not nullify the individual learning path of the student but facilitate its rigorous adoption. Education Technology is one sure means of our attaining quality education.

Examination Reform : My fifth suggestion is to reform our examination system which is today simply a test of memory and the memory of outdated information and useless bits of knowledge at that. The present examination system and its diplomas are related of course to our bad employment policies and procedures, where the first question of the employer is, Have you passed your S.S.L.C. or B.Com. or M.Sc. ? Instead of every employment being dependent simply on some educational diploma, or certificate, there is the parallel need for developing a system of job specifications and evaluations that are not diploma dependent. Within the education system, the broad lines of examination reform should revolve around three principles. First there should be a detailed periodic evalution and record by each school of each student's learning attainments. The periodicity should be somewhere between the weekly and the three-monthly. Second examinations should be eliminated where they are not needed. So called practical examinations should be dropped, as they would be replaced by continuous records of all forms of the pupils' efforts and attainments. In general there should be no examinations except for the terminal educational stream the 4th, the 8th, school final and higher education and university terminals. Third the content of such examinations should be a test of the students' inventiveness, learning ability, decision making and approach to problems. At present no student who attempts to think during an examination can ever complete his paper. I am therefore proposing a system under which a student's educational ability and qualification will be evidenced first and primarily by his school records and by his performance in a few major examinations during his entire school career, as an indication of how far he has learnt how to learn. And a first practical step to attain

this reform would be to abolish all examination fees on which certain parts of our educational system rely for their financing, and which act as a major obstacle to examination reform. For an educational institution to live on examination fees is like a factory earning its profits on sweated labour. I propose that we charge fees for secondary and higher education including a share for the university, with a generous system of scholarships for the needy and the economically discriminated, and use the resources to free examinations from fees.

Adult and Life-long Education : My sixth suggestion is that we in Tamil Nadu should engage ourselves during the seventies to wipe out the scandal of illiteracy which afflicts over 60 percent of our people. This can be done. Some 16 months ago, I joined with many of you in the first State Seminar on Adult Education held at Rajaji Hall and developed a Five Year Programme for removing illiteracy in Tamil Nadu. That programme involves opening 40,000 literacy centres, each running two courses annually, using the teachers in the 8500 high and upper elementary schools, retired teachers, high school and college students and women volunteers as teachers and engaging the Teacher Training Schools and Colleges for developing literacy primers, reading materials and simple audio visual aids suited to the surrounding locality of each centre. The whole programme would cost Rs. 1.8 crores per year for five years, of which the State Government will have to provide Rs. 1.4 crores per year and the local bodies 40 lakhs per year, which the panchayat union representatives readily agreed to. I propose that a State Board of Adult Education be set up and this programme be launched from the next fiscal year, 1972-73. It is not resources that we lack. Of course we lack resources for everything. But when we are convinced and when we will it, we find the resources, as in our 1969 drought stricken districts in Tamil Nadu, where we spent Rs. 10 crores, or the Rs. 1 crore per day we are spending today on the needy East Bengal Refugees. Do we have and can we generate the will to abolish illiteracy in our State ? If we do, the resources can be found by saving on the wastes of our existing educational system. It should not be found simply by adding Rs. 1.4 crores to our existing education budget of Rs. 67 or 83 crores. That would be an invitation to further wastes. But the manner in which we finance and execute this

high priority programme, high priority because it is part of our war against poverty, it is social justice to the discriminated Tamilians, is one practical evidence of our renewed belief in life long education. Education is not something that can be acquired in the first 10, or 14 or 18 years of our life. It is the process of learning all our lives. Those of us who missed it or were excluded from learning at our early age can and must now catch up. In such a system of permanent education, there are no permanent literates and no permanent illiterates. We are all illiterates because the world around us and our State are changing so fast, and knowledge and information expanding so rapidly, that we are none of us literate today unless we are learning every day! It is for this reason that we in Tamil Nadu must break down the walls that separate the school from society, the college from community and through a system of கல்விப் பணி மனைகள், correspondence course, evening classes, workshops, radio and other audio visual programmes, refresher courses and rural libraries and museums, offer the opportunity for all of us to be continuously learning. Our educational and training institutions must not be like our public sector plants—working to 40-50% capacity. They must work for 24 hours a day for all the people, children and adults, men and women.

Increased Production and Improved Distribution: My seventh suggestion is that our educational system from the primary to the research level should be directed to helping us in Tamil Nadu to increase our production every day and in every way. With the technological break through in our agriculture, paddy and other food crops, pulses and cash crops, we should aim at an annual agricultural increase of 8 percent. Similarly our education should contribute to increased industrial production including increased exports, through using our public sector to full capacity, promoting our private sector and expanding our small scale and cottage industries to a point where our annual rate of industrial growth moves to 10 percent. These are not impossible targets. Over the past three years, Punjab has been increasing its production by 10 percent and Haryana by 20 percent. This production oriented education should also educate particularly the poorer 60 percent of our people in family life responsibilities and planning, so that their per capita share of the State's output is not conti-

nuously diminishing. This leads to the other objective of our education which should be to promote a spirit of team work, of social solidarity so that the 60 percent poorer section of our people in the State increases its employment and income by the end of the seventies by 8 to 10 times its present level. This again is feasible: an agricultural worker in the Punjab earns Rs. 15 a day today. This redistributive target must be attained not only through Central and State fiscal and legislative enactments, but even more through voluntary restriction of consumption by the well-to-do 40 percent upper and middle classes in Tamil Nadu. It is our education which is the key to such acceptance of voluntary restraints. And so during the Seventies we must through our work and education help Tamil Nadu to overcome its poverty syndrome. A poor society will have a poor educational system, and so education's first and major target is poverty.

Educational Management: My eighth suggestion is that our educational management and administration be reorganised as it has not really changed since the nineteenth century. The only change that we have made is to split the Directorate of Education in the capital into four directorates based on levels of education—School, Collegiate, Technical, and Medical. At the district and panchayat level we still have the District Educational Officer and his staff who are expected to perform a variety of managerial and substantive functions: to make grants to schools: to check their standards and attendance records: to supervise the managements of public schools and guide those of private schools: to arrange the appointment, transfer and posting of teachers: to facilitate retirements: to encourage and guide reform of the curriculum and effective teaching of the syllabus etc. Is it surprising that the poor district officer and his staff who are expected to be Jack of all trades, are master of none? There is need for modern management of our education system, which ought to set an example of managerial efficiency. There should be two educational cadres from the State capital to the village level. One would be the administrative cadre, responsible for administering the educational system and providing the grievance machinery for the many and constant problems faced by teachers. The other should be a pedagogic cadre which would be responsible curricular reform, modernised teaching techniques and overhaul of text books and examinations.

Systems Planning: My ninth suggestion is that the Government undertake systems Planning of Tamil Nadu Education. The seventies will see a consideration increase in student enrolment at all levels of education for three reasons: (a) I interpret the 1971 census to mean that due to demographic pressure, 60,000 new pupils will seek primary school entry every year over and above the 1.5 lakh children still to be enrolled. (b) As the present educational wastage and stagnation are corrected, there will be a doubling of the intake in each class, particularly in primary education, with its repercussions on the other levels. (c) As our struggle against poverty and illiteracy succeeds, the present 25 percent of high school and college students from these homes will increase rapidly. Education is an inter related series of levels. Education is sub system in the wider Tamil Nadu economic and social System. Given the economic and employment perspectives of the State, there should be growing terminal programmes of vocational courses for students in all districts who cannot and do not continue beyond primary and secondary levels. Further all the various facilities referred to earlier should be available to those who wish to continue their education at any point in their working lives. Hence I suggest that the Government through the department of educational labour undertake the planning of Tamil Nadu Education as a Sub-system within its broader Plan for the Seventies.

Annual Critical Appraisal of our Education: My final suggestion is that the State Government should present annually to the legislature, a critical appraisal of our entire educational system in its மானியக் கோரிக்கை-13. At present this note is a statement of positive educational achievements of the past year, with an explanation and justification of the budget which had been voted and the actual disbursements during the year. I suggest that the report should also include information of the problems, difficulties and set backs that Tamil Nadu education faced during the year along some such lines as the 5 point weakness that I have attempted to portray. Then the annual report will provide a clear summary picture of the gains and loses, the strong points and weaknesses of our educational system. On the basis of such a critical appraisal, the Government can strengthen the critical points, the legislature can offer practical advice, the teachers can

make their specific contribution to remedying the weaknesses, the students can discharge their privileged responsibilities adequately, and the parents and public can take corrective action to make Tamil Nadu education an expanding and efficient system of learning, with a higher pay off, materially and spiritually.

For that is the call of Tamil Nadu education for the Seventies. It is a call to the Government which represents us and is always willing to shoulder its educational responsibilities. In our State and Country, however, with all the many sided pressures that our poverty imposes, the Government cannot do everything. It can lead, it can direct, it can finance, it can high-light the problems, it can prime the pump. But the working of the educational pump, the attainment of educational results depend on the teachers, the students, the parents and the public. And so it is we, all of us, who are called to make education in Tamil Nadu a source of growth, a fountain of wisdom and a well spring of charity.

CORRESPONDENCE

I Extracts from the letter dated 21 June 1971 from Mr. T. Suryanarayana Rao, M.A., Head of the Department of Economics Anwarul-Uloom College, Hyderabad.

As I look back on the workshop at Tambaram I feel happy and well rewarded. We gained an insight into research methodology. On the subject level too the workshop gave us good drilling. Besides, the lectures by the visiting professors and our individual discussions with them proved very useful.

However, so far as this group is concerned one follow-up course would be not only fruitful but necessary also. I wish that our recommendation for a refresher workshop at Dharwar would be implemented.

We the six participants met together a few days back and formed into a working group and we called ourselves "The Tambaram Group". We decided to meet informally at least once in a month and compare notes through discussions, paper presentation or what Dr. Kurien used to call 'performing'. I am glad to inform you that the first meet will be at my house on the 2nd Saturday in July next. Mr. H. Venkateswara Rao will present his paper. Actually he was to do it at Tambaram but could not do so because he has to leave suddenly for Hyderabad. Dr. Nagaraja Rao has enthusiastically agreed to help us in our work. I am sure Dr. Iengar too would guide us especially in econometrics and statistical applications.

I take this opportunity to thank you and Dr. Kurien for arranging this Workshop and helping us in research methodology.

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II Extracts from Letter dated 22 July 1971 from Mr. T. Suryanarayana Rao, M.A. Head of Department of Economics Anwarul-Uloon College, Hyderabad.

I am happy to inform you that the first meeting of the six Osmania participants to the Summer Workshop was held on July

10. Mr. H. Venkateswara Rao presented a paper on his subject of Research. A brief report of the meeting as also an outline of Mr. Rao's paper is enclosed herewith.

* * * *

The six Osmania participants to the recent Summer Workshop on Research Methodology at Madras met on 10th July, 1971 to discuss the research outline of Mr. H. Venkateswara Rao.

The following members were present :—

Dr. M. Nagaraja Rao,

Mr. H. Venkateswara Rao,

Mr. Nandedkar,

Mr. K. Seshagiri Rao,

Mr. M. Narasimhulu,

Mr. T. Suryanarayana Rao,

Dr. M. Nagaraja Rao was in the chair.

Mr. H. Venkateswara Rao presented his research outline on 'The Long Term Educational Plan for India', The main object of study is to determine the blue print of a long term educational plan as a consistent formed and an integral part of Heavy Strategy which is supposed to be the optimum long term economic strategy for our country. Mr. Rao explained how the Sraffa Neumann analysis could be applied to educational field with benefit. He also stressed the need for integrating the educational planning with the optimum strategy of economic planning.

The conceptual and methodological issues involved in the analysis were discussed by the members.

The next meeting of the group will be held on Saturday August 14, in the New Science College at 5 p.m. Mr. T. Suryanarayana Rao will present a paper relating to his research.

The outline of Mr. H. Venkateswara Rao's presentation is given below.

1. *Title :* 'Long term Educational Plan for India'

2. *Statement of the Problem:* Various studies by eminent economists in the recent past focus attention on the fact that education as a source of human capital formation contributes substantially to economic growth. Such being the pivoted role of education in economic development, the developing countries should frame a long term education plan as a consistent and an integral part of the over all optimum economic plan. The relationship between the economic plan and the educational plan should be one of mutual dependence. In the light of these requirements if one examines existing approaches to educational planning one would find that they are not adequate for purposes of long term development.

It is also not difficult to show that in our country we are not following an optimum economic strategy and so there is no optimum long term educational plan. During the post-independence era in our country, though educational expansion has been phenomenal, it is of an unplanned character. Mostly decisions regarding educational expansion are based on political expediencies and other non-economic factors. Thus it is clear that we are following neither an optimum long term economic strategy nor the corresponding educational strategy.

3. *Objective :* The objective of this study is to determine blue print of long term educational plan as an integral and a consistent part of Heavy Strategy as developed by Prof. Gautam Mathur which is supposed to be an optimum economic strategy considering the population and other initial factor endowments.

4. *Method :* Sraffa Neumann input-output model is used as a method of analysis for this purpose.

5. *Hypothesis/Assumptions :* (a) It is assumed that planning is essentially a centralised process and any effort to overemphasise

its decentralised aspects will inevitably lead to the postponement of the declared objectives.

(b) Only economic aspects of educational plan are considered in this study.

(c) It is assumed that the Heavy Strategy is the optimum plan of long term development for India.

6. The study proposes to cover the formal educational system as a whole for the entire country. Continuing Education and mass programmes of illiteracy eradication are outside the scope of present study.

Articles published or approved for publication :

(1) 'Educational Costs - concepts and Issues' H.N. Pandi (Ed.) Measurement of costs, productivity and Efficiency of Education. Published by National Council of Educational Research and Training, New Delhi.

(2) ' Financing of Education - A case study of Andhra Pradesh' proposed to be published in the Indian Year Book Educational Finance :

In addition to the above, submitted three papers on ' Unit Costs of higher Education ' to the Education Commission Government of India in 1966.

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